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ABSTRACT

This report provides graphical comparisons among four Army-relevant groups as to thirteen indices of representativeness. The four groups break the 1972 high school seniors down according to whether or not they planned to enter the Army and again according to whether or not they had done so within eighteen months. The thirteen indices extend beyond such customary representation measures as race and sex to include family background, aspirations, interests, attitudes and attitude changes. These results are developed primarily from the National Longitudinal Study of the Office of Education. The quantitative displays are assessed in relation to three categories of issues about representation--political legitimacy, social equity, and military effectiveness. This assessment is the first part of a systematic analysis leading to a plan for defining and achieving representation in the Army. (Author)

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Special Report
SR-ED-76-1

Army Representativeness: The National Longitudinal Study

January 1976

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This report provides graphical comparisons among four Army-relevant groups as to thirteen indices of representativeness. The four groups break the 1972 high school seniors down according to whether or not they planned to enter the Army and again according to whether or not they had done so within eighteen months. The thirteen indices extend beyond such customary representation measures as race and sex to include family background, aspirations, interests, attitudes and attitude changes. These results are developed

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ARMY REPRESENTATIVENESS:
THE NATIONAL LONGITUDINAL STUDY

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1. Problem Formulation

1.1 Supply and Requirements for Representativeness

> Whereas the draft in essence gave the military a distribution system which caused the Services to more nearly reflect a cross section of American youth, the All Volunteer Force, on the other hand, leaves the socioeconomic and minority group balance more the chance.
>
> Interim Report of the Defense Manpower Commission/May 16, 1975

As noted in the remarks of the Defense Manpower Commission, the formal end of conscription may be said to have increased the odds against achieving a representative military subpopulation. On the other hand, the Army can now better compete in the job-and-career marketplace for the services of high school graduates; increased levels of compensation have provided the competitive edge to lower the "chance" occurrence of representativeness; and cost-effective policy can be designed to manipulate the balance of supply and demand variables to further reduce dependence on fortuitous circumstances.

The issue of *whether the Army can achieve representativeness* in the volunteer environment, however, is secondary to the question of *why the Army should be representative* of the larger society. The common expectancy of cross-sectional representation is a corollary to the "citizen-soldier" concept. It has long been an Anglo-American notion of democracy that the military establishment should at least approximate a cross-section of the male population. Nevertheless, issues of representation have only recently been applied to the *total* population. For many years, racial and ethnic minorities were selectively excluded from military participation, most noticeably in the higher echelons. Females have also only recently been included in the accepted notion of total population representativeness. (Representation by age groups has not yet come under direct question.)

Although the Army has frequently stated the goal of achieving a relatively representative cross-section of the civilian population, the objectives of representativeness remain somewhat vague. Furthermore, the argument is often made that mission accomplishment and efficiency overshadow issues of representation; that is, as long as the Army can choose and reject candidates from the available supply of applicants, and can be selective as immediate and long-term mission needs require, it should not matter whether social distributions reflect civilian society.

The actual effectiveness of the voluntary system *will* be subject to doubt as long as the Army attracts a disproportionate number of young people from poor families, a disproportionate number of Blacks, or a disproportionate number of people from the South and Southwest. There is a need, therefore, to examine the *supply* and the *requirements* for representativeness in Army enlisted personnel. In the case of both supply and requirements, it is logical to begin with a documentation of the situation as we find it. The Army's Deputy Chief of Staff for Personnel (DCSPER) has requested that the Army Research Institute (ARI) investigate the broad question of representativeness, and ARI has commissioned this study as a first step toward a systematic analysis and plan.

The remainder of this chapter is directed toward perceptions of *requirements* found in recent public discussions. Sections 2 and 3 are directed toward quantifying the *supply* situation by obtaining detailed characteristics of recent Army enlistees over a wide range of attributes and comparing the degree to which various subpopulations are represented in the Army's high school graduate subpopulation -- as opposed to a full population of high school seniors. Section 4 provides a current assessment of supply and requirements. In examining the current situation regarding representativeness, this study sets the stage for a systematic planning effort to determine specific goals of "representativeness" and the policies which can achieve those goals.

1.2 Recent Perceptions of Requirements

A number of different outlines can be used to catalogue various mandates for representativeness. The President's Commission on an All-Volunteer Force (The Gates Commission) considered several contemporary "objections" to the All Volunteer Force in its final report (1969), and categorized these arguments into nine issues. Some of these issues have been expanded into academic theses (e.g., minority representation), and some have decreased in popular discussion (e.g., the threat of a coup d'etat). At least four Gates Commission issues are directly related to this study: the development of a separate military ethos, problems relating to overrepresentativeness of

racial minorities and lowest economic classes, money-motivated mercenaries, and the decline of military effectiveness. Since support for several arguments has continued to fluctuate over time and since the issues themselves are the stimulus for research, documentation of the original political and academic sources has been omitted. The concepts and standards of representation have also formed the first chapter of a recent MSG report, under sociopolitical and socioeconomic criteria, with the focus upon racial representation in the officer force.[1/]

For the purposes of this report, three general headings have been selected to discuss criticisms of, issues about, and concerns for the representativeness of the Volunteer Army. These are: *political legitimacy*, *social equity*, and *military effectiveness*. Although a distinction is made between these categories, it is clear that the measuring parameters overlap. No attempt is made to subordinate Sections 2 and 3 into these same three categories. Rather, the three categories are used here to document current and continuing perceptions of representation requirements, and to provide a framework for evaluating NLS results (Section 4).

Political Legitimacy

The argument of legitimacy is based on the philosophical notion that, in the words of Aristotle, "the citizens of a free state ought to consist of those only who bear arms." The underlying democratic fibre of society should inspire personal sacrifice and the responsibility to serve in defense of one's government. By the same token, disposal of the right to fight and the duty to provide protection risks the surrender of liberty. Once *total citizen participation* in military affairs is removed or reduced -- and organizational linkages with the community become attenuated -- patriotism takes on a new meaning for those who do not serve, and distinctive military values develop to create an uncontrollable war-making force. The image of disciplined phalanxes, advancing down Pennsylvania Avenue to take over the government, may seem to be a far too extreme extension of this argument -- but the problem of creating an *isolated* professional Army may

1/ HumRRO Technical Report 75-23, U.S. Armed Forces Minority Officer Procurement (Alexandria, Virginia: HumRRO, 1975), pp. 11-17.

involve serious (though more subtle) sociopolitical consequences.

The strongest criticism of the volunteer concept concerns the social composition of the Army brought about through elimination of the draft: if *civilian control* is to be effective, the Army must be *representative of the larger society*. It must reflect the basic values and aspirations -- both political and moral -- of the totality of society. Critics contend that voluntary participation cannot achieve the goals of civil-military convergence, and point to several sociopolitical theories of organizational behavior as evidence.

The draft did provide a process of democratization (theoretically color-blind to race, economic or social status) whereby the systematic entry and egress of *"citizen-soldiers"* could assure the convergence of military and civilian ideologies. Multitudes of citizens, under the draft, would serve short periods of time in military service and then return to civilian life -- thereby creating a balanced perspective of military and civilian responsibilities. Although this *revolving-door process* of service contained certain avenues of escape for middle-to-upper class Americans, it did place the military in public view and fashioned an institutionalized means for recruiting.

Since wars require broad foundations of support, the conscripted (representative) Army could be depended on to provide an irritant or inhibition to engagement in armed conflict. Furthermore, the draft itself would act as a "lightning rod" of public sentiment against Presidential war-making powers and the use of American military forces in unpopular or immoral wars.

Isolation from civilian society, in contrast, could be expected to decrease the likelihood of dissent regarding the indiscriminate use of combat forces. In addition, middle-to-upper class Americans -- who provided the broad base of support against the Vietnam War -- may be expected to find higher-paying, less dangerous career alternatives elsewhere, and, consequently, not be within the ranks of the Army. An "ideological cast" will subsequently develop, creating an unresponsive *military ethos* -- lacking in its representation of the traditional "reluctant draftee" and

the political/economic pressures of his family. Since the initial decision to enter armed conflict is often decisive (and irreversible), it follows that the loss of this "lightning rod" effect will cause a violation of democratic processes and the unrestrained use of military muscle in world affairs.

The dissolution of traditional linkages with civilian society is also expected to be reinforced by the increased representation of individuals from similar social backgrounds -- and, therefore, similar socio-political perspectives and operating behavior. As a result, the Army may be expected to develop an independent, self-strengthening ideology, far apart from the prevailing consciousness of society.

Critics also claim that "voluntary Army" is only a euphemism for "professional Army" -- and that military professionalism will strengthen existing boundaries between civilian and military sectors. The perpetuation of a self-contained military institution will also be strengthened by reliance on:

1) Self-Recruitment, i.e., overrepresentation of the offspring of military men -- producing a unique professional socialization and strengthening of traditional military perspectives;
2) Negative Retention, i.e., the elimination of those enlistees (through patterns of promotion or self-rejection) who do not fit into the prevailing military establishment; and
3) Regional Representation, i.e., from the South and Southwest, where emphasis and acceptance of military careers is greater.

All of these factors, when combined, are expected to result in the development of atypical and far-removed military configuration: over-representative of conservative/right-wing, conventional, traditionalistic, and provincial enlistees. Recognition of the fact that this tough-minded politico-military organization will necessarily gravitate toward its industrial counterpart in civilian society creates the image of a monolithic war-making complex. The added ingredient of *professional mercenaries* -- attracted by pay rather than patriotism, and enlisting because they like to wear uniforms, carry weapons, and achieve instant machismo -- creates

a fearsome picture: an organization of hired guns, "meditating on blood," operating in isolation, seeking larger budgets and more wars to perpetuate itself -- men working at warmaking as civilians work at their jobs, apart from, and even at odds with, the population they had been sent to protect.

Social Equity

The issue of social equity, although very much a part of the issue of political legitimacy, is particularly applicable during periods of armed conflict or threat of war -- that is, unless the assumption is also made that military life is inherently repellent. The equity criticism, most often associated with Sen. Edward Kennedy of Massachusetts, states that the burden of defense (and threat of violent death) has become the primary responsibility of the minorities and disaffected poor of society. According to Kennedy, the volunteer Army "insulates middle and upper-class Americans from the horrors of war." This argument goes on to accuse the Volunteer Force concept of being a disguised form of class privilege: the exemption of society's most privileged members from the responsibility of providing national defense.

This issue was originally based on the theory that significantly higher proportions of Blacks, poor Appalachian Whites, and other working-class groups would be most attracted to the Army. Higher pay incentives, it was assumed, would only make the military more attractive to the less-skilled, less-employable, less-intelligent, generally less-able members of society who had fewer civilian alternatives and channels for social mobility.

As a reflection of the polarization between the rich and poor, and Black and White in other social institutions, the ranks of the Army would likewise be filled with disproportionate numbers of individuals who felt inadequate to compete in the civilian economy. "Economic conscription" would result -- as young men who were victimized by the vagaries of the economy, unable to find adequate employment, are "shunted off into the military."

Because members of the lower social strata would perceive entry into the Army as a last-ditch means to enter the larger society, the argument follows that both the Army and the enlistee end up in a compromising situation: the Army accepts otherwise unacceptable bodies for cannon-fodder and the individual accepts whatever job will qualify him for enlistment. This situation was expected to result in a heavily disproportionate level of Black soldiers in the ground forces, and a parallel underrepresentation of racial minorities in most technical (or competitive) military occupations. This system of selective exclusion also relates to the expected underrepresentation of Blacks and other minorities in the Army's officer corps.

Issues regarding the overrepresentation of racial minorities and poor Whites are also issues of military effectiveness, since it is generally accepted that an organization is only as strong as the ability of those in the rank and file. Critics also contend, therefore, that eventually the Army will become the people it enlists.

Military Effectiveness

A more fundamental issue than political legitimacy or social equity is the maintenance of national security. Military effectiveness calls for some as yet unprescribed mixture of "quality" personnel, and is a reminder of the concern about *under*representation of bright people. The argument in behalf of effectiveness assumes the occurrence of definite patterns of enlistment: that the intelligent, (somewhat reluctant) college-educated privates of the draft period will be totally lost; young men from better-educated families will likewise be lost; there will be a marked decrease in the above-average (Category I and II) individuals; minorities with some college education will choose higher-paying civilian alternatives; overloads will result in enlistees from the lower mental categories and levels of educational attainment.

Since high school graduation is generally accepted as proof of an individual's self-discipline and adaptability, one major contention is that overrepresentation of non-high school graduates will cause corresponding increases in disciplinary problems and training loss. In addition,

enlistees will exhibit lower moral standards and levels of motivation (i.e., the ability to accept or tolerate military discipline).

Disproportionate percentages of Blacks and other minorities, some sociologists believe, could also cause a "tipping effect" -- that is, the point at which the proportion of Blacks in a particular unit becomes so high that a large number of Whites are no longer willing to enter that particular Service or branch unit. In a gradual fashion, overrepresentation will result in the perception, by potential White enlistees, that such units have low status.

Overrepresentation of Blacks, some observers contend, will also increase racial tensions, levels of on-post crime, drug abuse -- and whatever additional problems can be transferred from the inner-city ghettoes or other lower socioeconomic places of origin. Some Americans may even be expected to detest and mistrust an overly Black military, and will openly express fear at the idea of being defended primarily by a racial minority -- not to mention the Middle-American apprehension that disaffected Black servicemen will one day feel that they owe a higher allegiance to each other than to the United States Army.

The issue of underrepresentation and overrepresentation has even been applied to problems of foreign policy: combat units that are overweighted with racial minorities will have limited credibility in the world arena; such units may likewise not project effectively the desired goals of U.S. foreign policy, and be detrimental to the image of American society abroad.[1/]

A corollary to the overrepresentation of minorities is the expected development of a military caste system in the Officer Corps, with Academy graduates at the top. This in-bred, isolated, regional, elitist corps of officers is expected to be at the top of the military hierarchy -- with an equally isolated group of low-motivated, low-quality individuals in the bottom ranks of the enlisted personnel. Organizational ineffectiveness, disenchantment, low self-actualization, low productivity, job dissatisfaction -- i.e., indicators of the low quality of working life --

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1/ It should be noted that the "overrepresentation" of racial minorities issue is based, to a great extent, on the assumption of the inherent racism of the American people and the rest of the world.

may be expected to result from this hierarchical polarization. Limitations placed on the opportunities for advancement among those who enter with high expectations may further add to a lowering of organizational effectiveness.

Summary

The preceding discussion has included several issues of representation. The parameters of the problem are wide and extremely complex. These parameters relate not only to the effectiveness of the military organization as an organization, but also to the social and political issues of the civilian sector.

Certain restrictions on the extent and variety of available survey data prevent an exhaustive treatment of all the issues presented herein. The thirteen parameters which are studied in Sections 2 and 3 for high school graduate accessions can be cross-indexed as follows:

Political Legitimacy: All parameters; especially race, socioeconomic status, region, father's occupation, important goals in life, important factors in selecting a job or career.

Social Equity: Especially race, socioeconomic status, father's occupation, parents' income, important factors in determining life's work.

Military Effectiveness: Especially literacy level, aptitude, race, parents' income, region, high school activities, important goals in life, important factors in selecting a job or career, important factors in determining life's work, job satisfaction, self-appraisal.

Although this discussion has set forth several criticisms and concerns regarding the continuation of voluntary enlistment, it should be stressed that no claims are made as to the validity of these criticisms. Rather, they are presented only to set the stage for evaluation of the population attributes. A brief assessment of the current and related enlistment population trends appears in Section 4, following the presentation of analytical evidence.

2. Methodology for Quantifying the Supply

2.1 The NLS Data Base

The primary source of data for this research was the National Longitudinal Study (NLS) of the High School Class of 1972. In the spring of 1972, the original Base Year NLS Questionnaire was given to 18,143 high school seniors throughout the U.S. It had been under planning since 1969 by the National Center for Educational Statistics (NCES) of the Office of Education. The sample was designed to provide a stratified random cross-section of the entire high school senior class of 1972. Measurements were taken from the students and from their schools as to demographics, achievements, attitudes, and motivations.

In October of 1973, thanks to an extensive follow-up operation, 86% of the original respondents were recontacted (and some new ones were picked up) and asked to fill out a new questionnaire asking them what they were doing now, whether and how their plans had changed, and so forth. Through this system, four interesting subpopulations can be identified for each activity area in the Follow-Up survey: those engaged in that activity and those not, and whether or not they had intended to do so in each case.

The wealth of personal information available, coupled with a carefully designed, well-executed sampling technique makes each of the Base-Year and Follow-Up questionnaires valuable sources in their own right. Additionally, however, the capability to follow one individual through the combined surveys makes the identification of transitions over time a matter of certainty; this is in contrast to the speculative inferences one is necessarily limited to by "one-shot" questionnaires.

For the purpose of this report the population under consideration was restricted to those participants who had answered both the Base-Year and the First Follow-Up questionnaires. This group was further divided into four groups on the following basis:

I. those who planned to enter the Army and did enter (always)
II. those who planned to enter the Army but did not enter (loss)
III. those who did not plan to enter the Army but eventually entered (gain)
IV. those who did not plan to enter the Army and did not enter (never)

This last group (IV) was the vast majority and thus approximated the population as a whole in all parameters studied. They, therefore, are used interchangeably. The size of each cell is presented in Table 1. The weighted cell sizes are based on the weights computed by NCES. A complete description is available in the Base-Year and First Follow-Up Data File Users Manual.[1/] The weight used for this research was W4, which rescaled to the total class from whom the sample was taken. A complete list of the questions used in this analysis is presented in the Appendix.

Since many of the questions were based on "scaled" items, an explanation of cut-off points for the various characteristics is required. In questions giving the choices (1) Not Important, (2) Somewhat Important, and (3) Very Important, the group of people examined is those who answered (3). On questions whose choices were (1) Agree Strongly, (2) Agree, (3) Disagree, (4) Disagree Strongly, and (5) No Opinion, the people who answered (1) and (2) were combined as were those who answered (3) and (4). The (5) answers were eliminated. Questions whose choices were (1) Very Satisfied, (2) Satisfied, (3) Dissatisfied, (4) Very Dissatisfied were also grouped (1) with (2) and (3) with (4).

Since the NLS provided information on people already in their senior year of high school, it profiled primarily high school graduates. In order to examine the accessions who are not high school graduates, the Armed Forces Examining and Entrance Station (AFEES) surveys from 1973 through 1975 were used. The AFEES surveys ask questions about personal background and enlistment incentives, and are administered to enlistees at the time of their Armed Forces Entrance Examination processing. Although attitudinal information found on the NLS was not available from the AFEES survey, more recent information on age, race, and sex, as well as some indication of the composition of the non-high school graduate populations, made AFEES surveys relevant to this study.[2/]

1/ Jay Levinsohn, John A. Riccobono, R. Paul Moore, National Longitudinal Study of the High School Class of 1972 Base Year and First Follow-Up Data File Users Manual (North Carolina: Research Triangle Institute, 1975).

2/ Another useful longitudinal data source - the Gilbert Youth Surveys - is now becoming available for continued phases of this study.

Table 1

CELL SIZES

CELL SIZES	Enter Army			
	Planned To		Did Not Plan To	
	Did	Did Not	Did	Did Not
Unweighted	76	91	275	21,986
Weighted	7,615	13,023	35,331	2,982,503
Interpretive Label	"Always"	"Loss"	"Gain"	"Never"

2.2 Snowflake Diagrams to Compare Army-Relevant Groups

As developed in Section 1, the issues of representativeness require over a dozen parameters for adequate description and evaluation. As documented in the preceding section (2.1), the NLS provides a unique opportunity to measure these parameters for four Army-related subgroups.

Two approaches have been selected to execute this measurement. The primary method is the traditional approach of considering each parameter and comparing the four Army-relevant groups. The use of "snowflake" graphs has been developed and employed for this purpose. The secondary method begins from the four Army-relevant groups to select which parameter values best characterize these groups. The THAID[1/] procedure in the OSIRIS computer package has been used to achieve this (Sections 2.3 and 3.2).

The basic data from NLS Base-Year and Follow-Up studies provided cross-tabulations of the selected characteristics of representativeness against the four Army-relevant populations. These results are tabulated as Tables 2 and 3.

1/ James N. Morgan and Robert C. Messenger, THAID - A Sequential Analysis Program for Nominal Dependent Variables (Ann Arbor, Michigan: University of Michigan, Institute for Social Research, 1973).

TABLE 2
PERCENTAGE DISTRIBUTIONS BY CHARACTERISTIC: ENTERED ARMY VS. DID NOT

Characteristic as HS Senior	Responses	Entered Army	Did Not Enter Army
Literacy Level	1	3	2
	2	16	8
	3	20	17
	4	22	2
	5	16	21
	6	8	13
	7	1	3
Aptitude	Low	35	24
	Medium	45	44
	High	15	27
Race	White	75	82
	Black	17	8
	Other	8	10
Socio-Economic Status	Low	42	25
	Medium	42	51
	High	14	23
Region	North East	18	27
	North Central	27	30
	South	35	26
	West	20	17
Father's Occupation	Professional, Business Owner	11	17
	Operative, Laborer, Craftsman	34	32
	Service, Sales, Clerical, Technical	49	11
	Manager	3	21
	Police, Fire	3	2
	Farm	1	4
	Military	4	2
Parents' Income	< 3 Thou.	9	4
	3-6 Thous.	13	8
	6-7.5 Thou.	11	8
	7.5-9 Thou.	10	8
	9-10.5	10	10
	10.5-12 Thou.	10	8
	12-13.5 Thou.	4	8
	13.5-15 Thou.	5	6
	15-18 Thou.	6	7
	18 Thou. +	8	12
High School Activities	Athletics	56	45
	Cheerleading, etc.	7	53
	Debating, Music, Drama	25	32
	Honorary Clubs	4	14
	Newspaper, Yearbook	14	30
	Subject Matter Clubs	15	25
	Student Government	19	19
	Vocational Education	21	22
	Hobby Clubs	22	18

Characteristic as HS Senior	Responses	Entered Army	Did Not Enter Army
Important Goals in Life	Success	84	84
	Good Marriage	78	81
	Money	28	18
	Friends	77	78
	Steady Work	86	77
	Community Leader	17	11
	Better Oppty. for Child.	73	66
	Living Close to Relatives	7	6
	Getting Away from this Area	20	14
	Correcting Social Injustice	23	27
Important Factors in Selecting a Job or Career	Money	30	21
	Oppty. to be Creative	32	38
	Useful to Society	45	53
	Avoid High Pressure	28	30
	Working in World of Ideas	33	36
	Freedom from Supervision	27	31
	Oppty. for Steady Progress	50	53
	Chance to be a Leader	16	15
	Working with People	36	49
	Position Looked up to	37	24
Important Factors in Selecting Life's Work	Previous Experience	16	19
	Relative/Friend in Same Line	15	13
	Available Openings	34	28
	Work Matches Hobby	23	25
	Good Income	37	31
	Job Security	43	40
	Int. Imp. Work	74	77
	Freedom to Make Decision	43	42
	Oppty. for Promotion	52	41
	Working with Friendly People	47	56
Job Satisfaction	Pay and Fringe Benefits	74	70
	Importance and Interest of work	67	68
	Working Conditions	54	81
	Opportunity of promotion with this employer	54	59
	Opportunity for advancement in this line of work	74	59
	Security and permanence	71	73
	Opportunity for development of new skills	61	57
	Work as a whole	64	78
Self Appraisal	I take a positive attitude toward myself	87	86
	I feel I am a person of worth	93	93
	I am able to do things as well as others	94	92
	On the whole I am satisfied with myself	70	75
	Good luck is more important than hard work	90	91
	Everytime I try to get ahead something stops me	64	80
	Planning only makes one unhappy, plans never work out	80	81
	People who accept their condition in life are happier	66	67

TABLE 3

PERCENTAGE DISTRIBUTIONS BY CHARACTERISTIC: FOUR ARMY-RELEVANT GROUPS

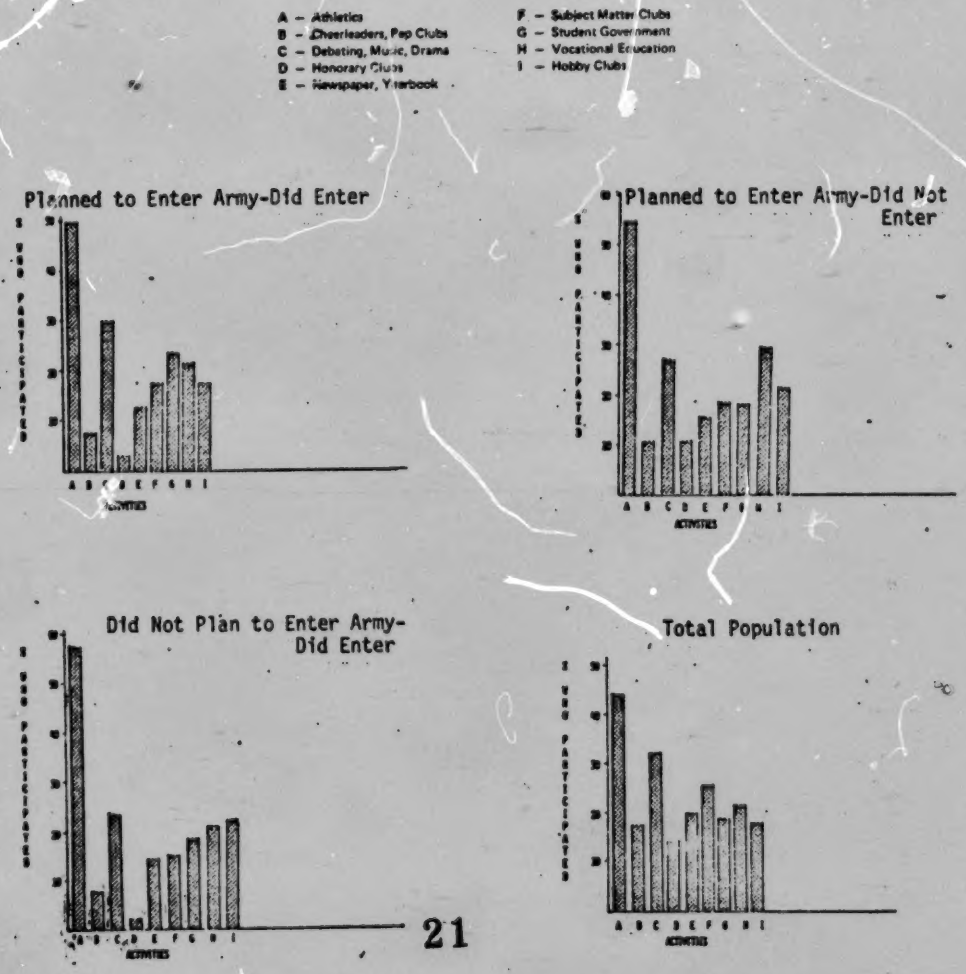
Characteristic as HS Senior	Fig. No.	Responses	Planned To Did	Planned To Did Not	Did Not Plan To Did	Did Not Plan To Did Not
			--	--	11.9	13.4
		1	0.0	6.6	3.3	2.1
		2	14.3	11.4	16.3	8.3
Literacy Level	4	3	12.6	21.8	21.0	16.5
		4	30.5	15.7	20.4	22.4
		5	28.0	30.1	14.4	21.3
		6	5.0	0.0	4.6	13.2
		7	0.0	2.1	1.2	2.9
		Low	22.2	44.8	38.	24.2
Aptitude	5	Medium	54.4	38.7	43.8	44.1
		High	22.6	15.6	11.0	27.4
		White	63.8	69.2	73.5	82.2
Race	6	Black	11.8	8.8	17.7	8.2
		Other	4.4	22.0	8.8	9.6
		Low	44.1	43.7	41.9	25.6
Socio-Economic Status	7	Medium	40.2	40.1	41.4	50.8
		High	15.8	15.4	11.7	23.2
		North East	12.1	17.6	19.1	26.7
Region	8	North Central	28.2	39.9	26.8	30.3
		South	41.2	29.4	33.3	25.9
		West	18.4	13.1	20.6	17.0
		Professional, Business Owner	6.0	9.0	12.0	17.0
Father's Occupation: New Occupational Divisions	9	Operative, Laborer, Craftsman	29.0	37.0	34.0	33.0
		Service, Sales, Clerical, Technical	14.0	4.0	9.0	11.0
		Manager	4.0	4.0	8.0	11.0
		Police, Fire	4.0	1.0	3.0	2.0
		Farm	4.0	5.0	0	4.0
		Military	18.0	2.0	1.0	2.0
		< 3 Thou.	3.3	10.3	9.9	4.1
		3-6 Thou.	11.4	21.1	13.2	8.3
		6-7.5 Thou.	18.7	7.7	9.8	8.3
Parents' Income	10	7.5-9 Thou.	8.8	8.2	10.8	7.9
		9-10.5 Thou.	16.8	12.8	8.8	10.0
		10.5-12 Thou.	8.0	3.7	10.5	8.0
		12-13.5 Thou.	2.1	7.3	4.6	7.6
		13.5-15 Thou.	7.1	1.1	4.5	5.7
		15-18 Thou.	5.7	4.9	6.0	7.4
		18 Thou. +	9.3	8.1	7.9	11.6
		Athletics	49.3	54.7	57.5	44.3
		Cheerleading, etc.	7.4	10.6	7.1	17.1
		Debating, Music, Drama	29.7	27.0	23.8	32.2
High School Activities	11	Honorary Clubs	2.8	10.2	2.8	14.3
		Newspaper, Yearbook	12.5	15.4	14.9	20.0
		Subject Matter Clubs	17.7	18.4	15.2	21.4
		Student Government	23.7	18.4	18.1	14.1
		Vocational Education	21.5	29.5	21.1	21.9
		Hobby Clubs	17.5	21.5	22.4	18.4

Characteristic as HS Senior	Fig. No.	Responses	Planned To Did	Planned To Did Not	Did Not Plan To Did	Did Not Plan To Did Not
		Success	78.3	79.2	84.8	84.0
		Good Marriage	16.7	79.3	77.3	81.3
		Money	18.3	22.8	29.7	17.5
Important Goals in Life	12	Friends	82.1	70.9	75.4	78.8
		Steady Work	90.6	81.5	84.6	76.6
		Community Leader	11.4	16.5	18.8	11.2
		Better Oppty. for Child.	74.2	60.1	73.3	65.7
		Living Close to Rel.	8.9	4.2	6..	7.7
		Getting Away from this Area	24.6	17.8	19.1	14.0
		Correcting Social Injust.	31.6	18.4	21.6	26.6
		Money	22.9	22.6	31.9	21.5
		Oppty. to be Creative	30.4	42.6	32.4	38.4
		Useful in Society	50.5	41.4	44.1	52.8
Important Factors in Selecting a Job or Career	13	Avoid High Pressure	21.3	28.4	28.6	30.2
		Working in World of Ideas	31.7	32.4	32.7	33.8
		Freedom from Supervision	28.1	30.2	27.0	24.7
		Oppty. for Steady Prog.	38.0	31.5	28.7	33.1
		Chance to be a Leader	34.3	23.5	21.6	15.2
		Working with People	50.8	39.0	33.6	48.7
		Position Looked Up To	39.0	27.6	36.1	24.6
		Previous Experience	15.1	14.9	18.4	19.0
		Rel. or Friend in Same Line	13.2	15.6	15.4	13.0
		Available Openings	31.0	26.3	31.2	28.2
Important Factors in Selecting Life's Work	14	Work Matches Hobby	25.7	23.4	22.2	25.1
		Good Income	41.9	36.3	35.8	30.5
		Job Security	46.3	41.5	42.0	39.6
		Int. Imp. Work	59.1	79.5	69.2	77.4
		Freedom to Make Dec.	43.6	44.9	42.8	41.9
		Oppty. for Promotion	61.7	49.5	49.4	39.7
		Working with Friendly People	45.7	48.3	47.2	56.5
		Pay and Fringe Benefits	72.9	60.1	74.5	69.6
		Importance and interest of work	65.0	62.5	60.9	68.0
		Working Conditions	46.3	76.3	56.2	81.1
Job Satisfaction	15	Opportunity of promotion with this employer	61.2	63.6	52.7	58.8
		Opportunity for advancement in this line of work	56.9	55.3	53.8	59.8
		Security and permanence	71.2	70.1	71.2	73.7
		Opportunity for development of new skills	68.2	66.0	59.4	64.2
		Work as a whole	67.6	78.4	63.5	78.2
		I take a positive attitude toward myself	79.1	57.6	73.6	77.7
		I feel I am a person of worth	93.6	81.6	85.3	87.6
		I am able to do things as well as others	90.7	88.7	86.0	87.1
		On the whole I am satisfied with myself	63.0	77.3	63.3	69.7
Self Appraisal	16	Good luck is more important than hard work	91.0	45.6	91.8	91.7
		Everytime I try to get ahead something stops me	68.3	72.7	69.8	81.3
		Planning only makes one unhappy, plans never work out	81.0	72.8	82.1	82.0
		People who accept their condition in life are happier	79.8	52.4	67.5	69.2

This report uses a new graphical technique called "*snowflakes*". This method can best be introduced by exhibiting the same data in two ways: first, by the traditional histogram method, and then by the snowflake diagrams. The characteristic chosen for this demonstration is High School Activities. Four histograms are needed, one for each of the subpopulations. These are presented in Figure 1.

FIGURE 1

HIGH SCHOOL ACTIVITIES


A – Athletics
B – Cheerleaders, Pep Clubs
C – Debating, Music, Drama
D – Honorary Clubs
E – Newspaper, Yearbook
F – Subject Matter Clubs
G – Student Government
H – Vocational Education
I – Hobby Clubs
Planned to Enter Army-Did Enter
Planned to Enter Army-Did Not Enter
Did Not Plan to Enter Army-Did Enter
Total Population
ACTIVITIES

The snowflake diagrams for this same information begin with the regular nine-sided polygon in the lower right of Figure 2, representing the total population. (There are nine activities and therefore nine vertices.) A related polygon is drawn for each of the other three subpopulations using the following calculation for each characteristic of the subpopulation:

$$V_i = 2 \frac{PCT_i}{PCT_I}$$ [1/]

where PCT_i [2/] is the percentage of people in the total population who participated in activity i. The value of V_i is then plotted along a radius extending from the center of the polygon toward point i. Thus, *the point lies in the interior of the polygon to the extent that less people in the subgroup participated in activity i than people in the total population participated in that activity; and, the point is exterior to the polygon to the extent that more people in the subgroup participated.* The four snowflakes are presented in Figure 3. An advantage of the snowflakes over histograms is that the snowflakes can be displayed projected on top of the base population polygon. More importantly, the snowflakes emphasize the *relative* comparison of the subpopulations with the total population and also with each other. The key has been chosen to facilitate such relative comparisons. Note that the "dash-dot" line of gains to the Army can easily be visually associated with the "dash" line to assemble all who joined, or the "dash-dot" line can be visually associated with the "dot" line to assemble all who changed their minds.

In these new graphs, it is important to be able to determine when the shortage or surplus in the subpopulation represents a statistically significant difference from the population as a whole. Confidence

---

1/ In figures 4-16, a radius of 2 inches is used for ease of viewing.

2/ PCT_i is found in Column 1, PCT_I in column 4 of Table 3.

FIGURE 2

HIGH SCHOOL ACTIVITIES

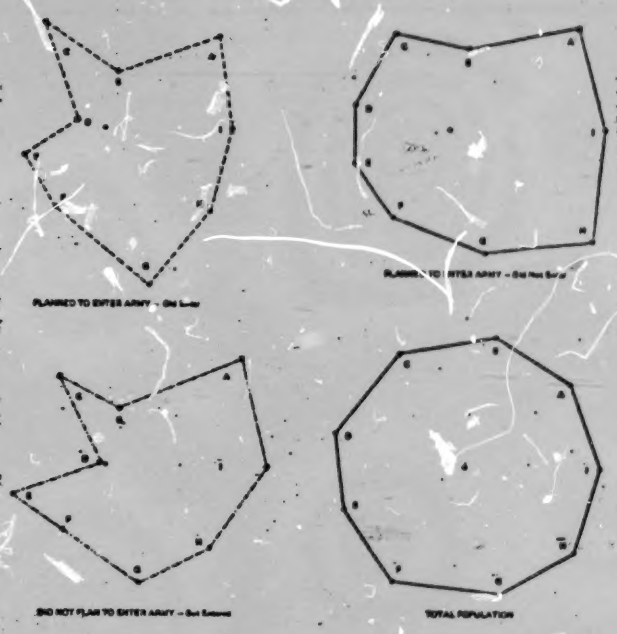
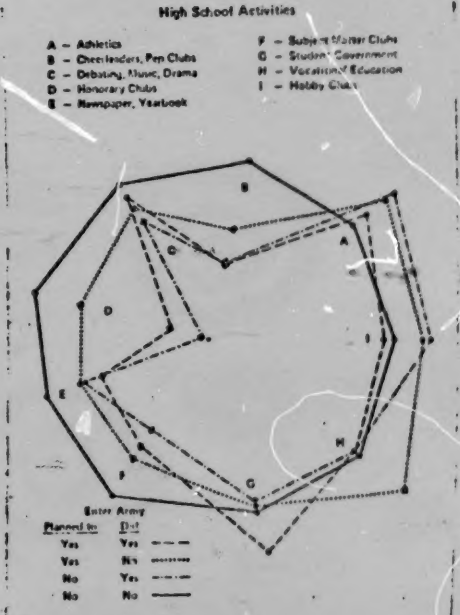


FIGURE 3

HIGH SCHOOL ACTIVITIES



limits were computed for the 95% level of significance for the snowflakes. These values are presented in Table 4. In the snowflake diagrams themselves, points significant at the 95% level are indicated by a *square* at the vertex; those which are not significant are indicated by a *circle* at the vertex.

TABLE 4

CONFIDENCE LIMITS FOR SNOWFLAKES

Based on a Standard Radius of 2 Inches

Base 1/ Actual %	n 2/ Sample Size	Inches of radius at which radius becomes significant A Inside	B Outside
.1	275	1.405	2.595
.2		1.603	2.397
.3		1.697	2.303
.4		1.757	2.243
.5		1.802	2.198
.6		1.838	2.162
.7		1.870	2.130
.8		1.901	2.099
.9		1.934	2.066
.1	91	.956	3.034
.2		1.310	2.690
.3		1.470	2.530
.4		1.578	2.422
.5		1.655	2.345
.6		1.718	2.282
.7		1.774	2.226
.8		1.828	2.172
.9		1.885	2.115
.1	46	.545	3.455
.2		1.030	2.970
.3		1.259	2.741
.4		1.406	2.594
.5		1.515	2.485
.6		1.604	2.396
.7		1.683	2.317
.8		1.758	2.242
.9		1.838	2.162

1/ Values from Table 3, Column 4
2/ Values from Table 1 (unweighted)

2.3 THAID to Discern the Characteristics of Change

The populations discussed in this study have been constructed to include people who did and did not do what they had previously planned (enlist, not enlist). Individuals in these four categories are compared and contrasted in terms of predetermined characteristics by snowflake diagrams in Section 3.1. The computer program THAID, part of the OSIRIS computer package,[1/] permits a different analysis.

Given a distribution of one measurement of representation for groups of people and a set of potentially explanatory characteristics for these differences, THAID first selects the one explanatory characteristic which produces the maximum difference in distributions -- i.e., it makes the split populations as different from each other as possible. Sequentially, each "child" population is split again and again in two parts. The NLS data could be split according to the Delta criterion, which measures the explanatory power of the split. In order to compare the "characteristics of change" between the military and the civilian populations, a series of seven THAID trees was run based on Base Year Question 31, "What is the one thing that most likely will take the largest share of your time in the year after you leave high school" and the corresponding answer in Follow-Up questions. Since the Follow-Up questions did not distinguish between working full-time and working part-time, the two areas were grouped. Also, attendance at a junior college or at a four year college or university was combined to form one activity state. These combinations provided eight activity states to be studied:

1. Going into the regular military (or service academy)
2. Entering an apprenticeship or on the job training
3. Working full or part time
4. Attending other school
5. Attending vo-tech or business school
6. Being a full-time homemaker
7. Plans not mentioned

In each case, there are questions in the Follow-Up survey to indicate the respondents' actual activity state after leaving high school.

1/ James N. Morgan and Robert C. Messenger, THAID - A Sequential Analysis Program for Nominal Dependent Variables (Ann Arbor, Michigan: University of Michigan, Institute for Social Research, 1973).

For each of the eight activity states, the population is divided into four subgroups (analogous to the military-related groups developed in Section 2.1) and the THAID program is run to determine which characteristics provide maximum differences in these four subgroups. For this sequence of runs, the following eight explanatory variables were offered to the THAID choices: sex, high school grades, father's occupation, race, parents' income, region, aptitude, and socioeconomic status. Two activity states were eliminated from this study. "Homemaker" was not considered since this state is composed almost entirely of females, and "Other Plans Not Mentioned" was deleted since it was too vague.

3. Results

3.1 Diagrams Comparing Army-Relevant Groups

This section provides a comparison of the four Army-relevant subgroups for each of the thirteen representativeness parameters, in Figures 4 through 16. The graphical technique is snowflake diagrams (introduced in Section 2.2). The raw data for these representativeness parameters appears in Table 3, and the sizes of the populations are given in Table 1. Values which are statistically significant at the 95% level have been marked by a rectangle at the corresponding snowflake vertex, and a summary list of these significant measurements appears as Table 5.

The reader may wish to make a visual linkage between the "dash-dot" and "dash" polygons, in order to assemble all Army entrants (not planned or planned); or to visually link the "dash-dot" with the "dot" polygons in order to assemble all "mind-changers."

TABLE 5

SIGNIFICANT POINTS ON SNOWFLAKES

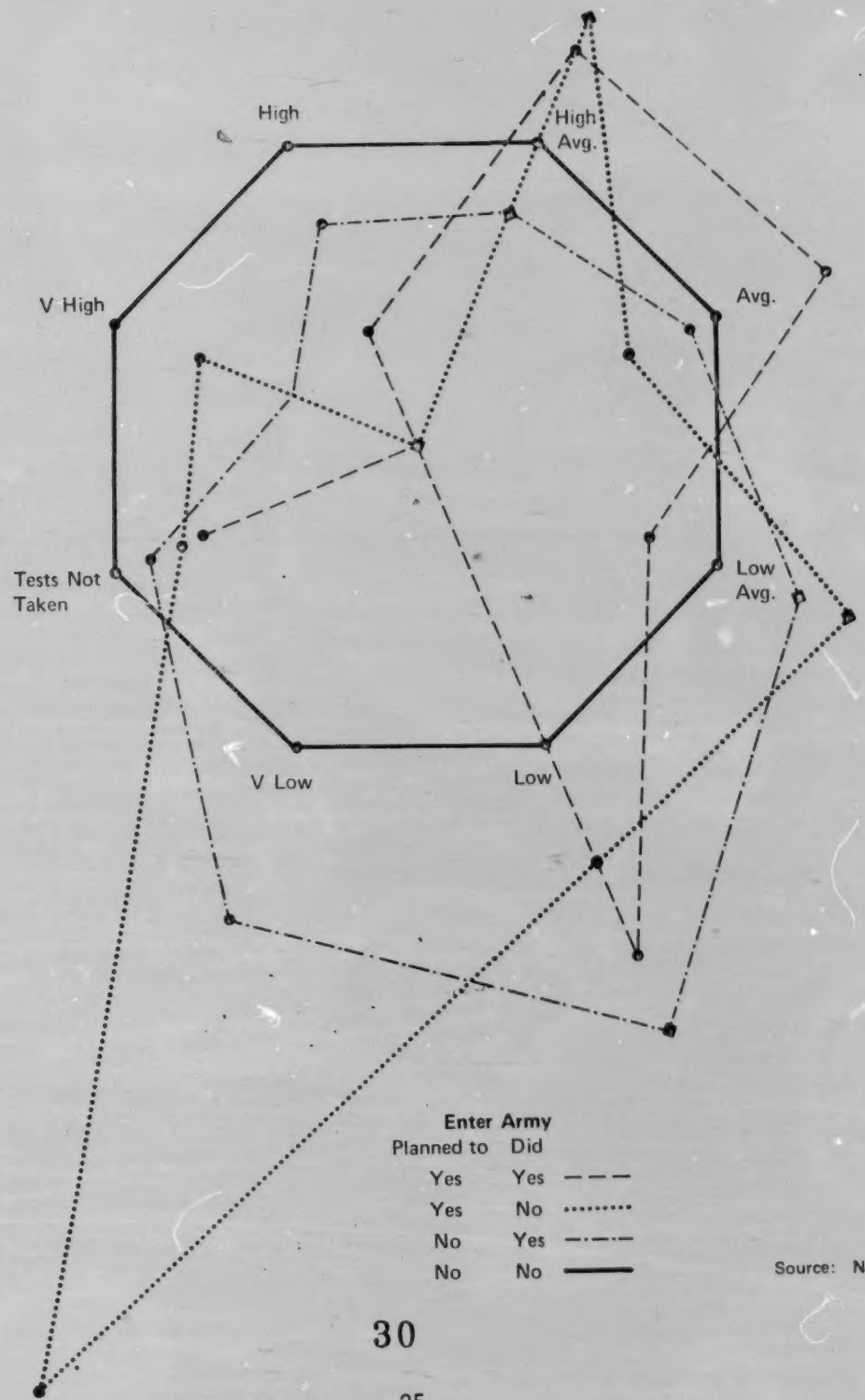
Characteristic	Fig No.	Responses	Planned To: Did	Planned To: Did Not	Did Not Plan To: Did
		No Answer			
		Very Low			
		Low			1.96
Literacy Level	1	Low Average		1.44	1.27
		Average			
		High Average		1.41	.77
		High		.00	
		Very High			•
		Low		1.83	1.56
Aptitude	2	Medium			
		High		.58	.48
		White		.84	.90
Race	3	Black			2.13
		Other		2.27	
		Low	1.70	1.68	1.61
Socio-Economic Status.	4	Medium		.79	
		High			.59
		North East	.46	.66	.73
Region	5	North Central		1.32	
		South	1.58		1.28
		West			
		Professional, Business Owner		.53	.71
Father's Occupation:		Operative, Laborer, Craftsman			
New Occupational Divisions	6	Service, Sales, Clerical Technical		.36	1.03
		Manager		.36	
		Police Fire	2.00		
		Farm			.00
		Military	9.00		
		< 3 Thou.		2.45	2.36
		3-6 Thou.		2.50	1.55
		6-7.5 Thou.	2.23		
Parents' Income	7	7.5-9 Thou.			1.37
		9-10.5 Thou.			
		10.5-12 Thou.		.46	
		12-13.5 Thou.			.61
		13.5-15 Thou.		.19	
		15-18 Thou.			
		18 Thou. +			.69
		Athletics		1.23	1.29
		Cheerleading, etc.	.43	.62	.42
		Debating, Music, Drama			.74
High School Activities	8	Honorary Clubs	.95		1.22
		Newspaper, Yearbook			
		Subject Matter Clubs			.73
		Student Government			
		Vocational Education		.96	
		Hobby Clubs			.96

Characteristic	Fig. No.	Responses	Planned To: Did	Planned To: Did Not	Did Not Plan To: Did
		Success			
		Good Marriage			.95
		Money			1.68
Important		Friends			
Goals in Life	9	Steady Work	1.18		1.10
		Community Leader			1.66
		Better Oppty. for Child.			1.11
		Living Close to Rel.			
		Getting Away from this Area	1.74		1.35
		Correcting Social Injust.		.69	.81
		Money			1.47
		Oppty. to be Creative			.84
Important		Useful in Society			.96
Factors in		Avoid High Pressure			
Selecting a		Working in World of Ideas			
Job or Career	10	Freedom from Supervision			
		Oppty. for Steady Prog.			
		Chance to be a Leader	2.24	1.53	1.41
		Working with People		.76	.69
		Position Looked Up To	1.68		1.47
		Previous Experience			
		Rel.or Friend in Same Line			
Important	11	Available Openings			
Factors in		Work Matches Hobby			
Selecting		Good Income	1.37		
Life's Work		Job Security			
		Int. Imp. Work			.89
		Freedom to Make Dec.			
		Oppty. for Promotion	1.54	1.24	1.23
		Working with Friendly People			.84
		Pay and Fringe Benefits		.86	1.07
		Importance and interest of work			.90
		Working Conditions	.57		.69
Job Satisfaction	12	Opportunity of promotion with this employer			.80
		Opportunity for advancement in this line of work			.90
		Security and permanence			
		Opportunity for development of new skills			
		Work as a whole	.89		.81
		I take a positive attitude toward myself		.74	
		I feel I am a person of worth			
		I am able to do things as well as others			
		On the whole I am satisfied with myself			.91
Self Appraisal	13	Good luck is more important than hard work		.93	
		Every time I try to get ahead something stops me	.84	.89	.86
		Planning only makes one unhappy, plans never work out		.89	
		People who accepy their condition in life are happier		.76	

If a characteristic is significantly different from the general population at odds of at least 19 to 1, the ratio of the percent of the subpopulation to the total population is given, otherwise a blank appears. Thus, a value greater than one indicates a significant surplus in the subpopulation while a value less than one indicates a significant shortage.

Figure 4

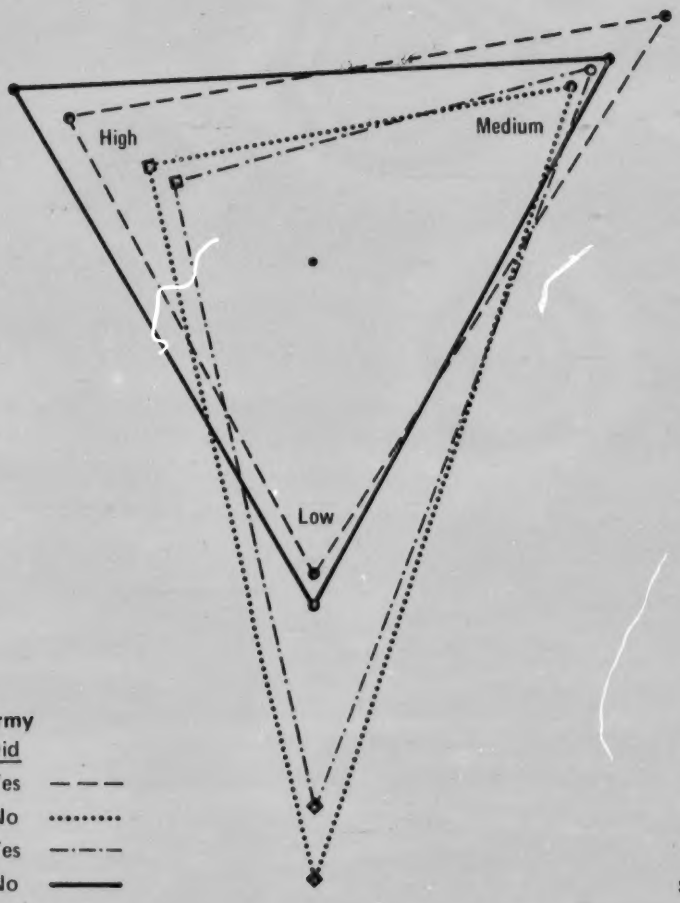
Literacy Level



Source: NLS

Figure 5

Aptitude



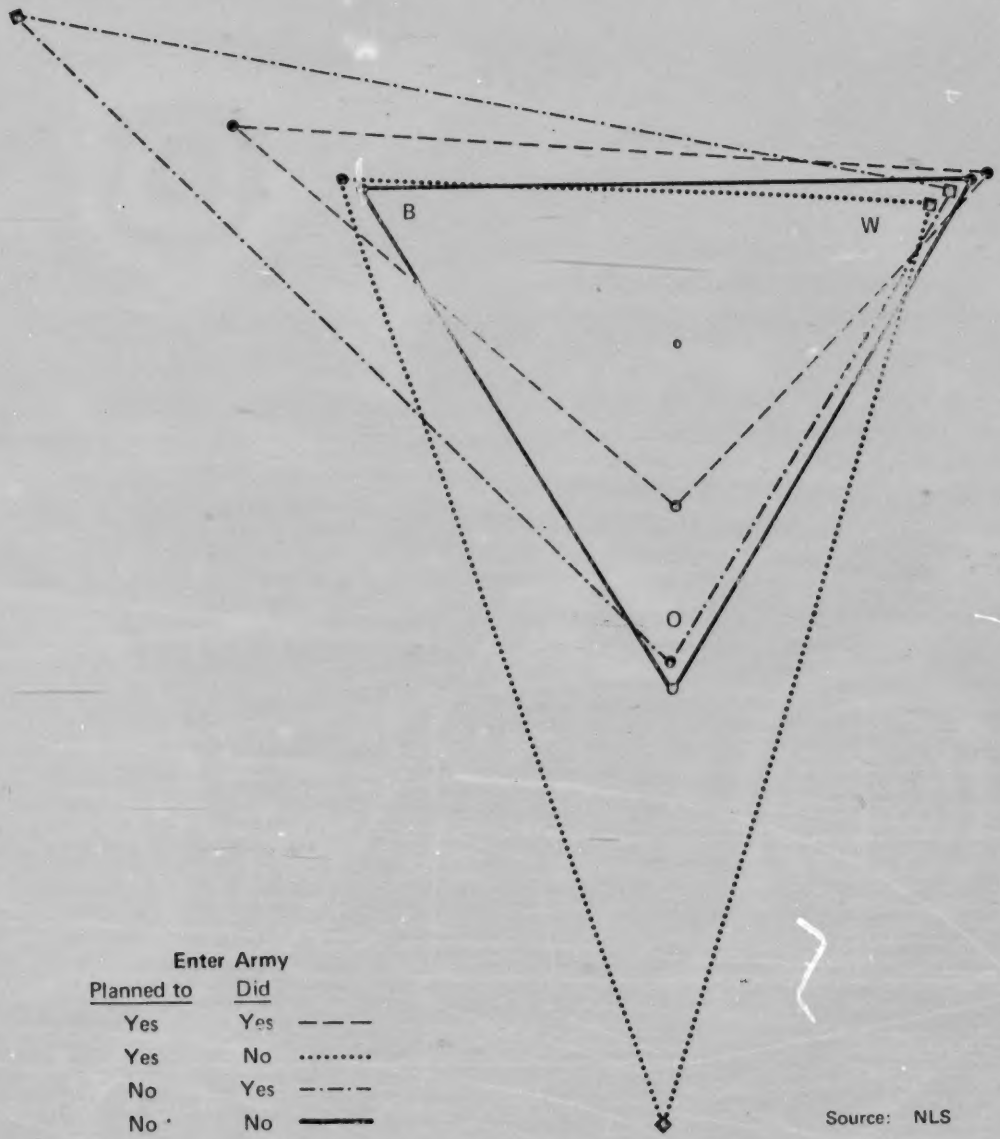
Enter Army		
Planned to	Did	
Yes	Yes	— — —
Yes	No	·····
No	Yes	—·—·—
No	No	———

Source: NLS

Figure 6

Race

W – White
B – Black
O – Other

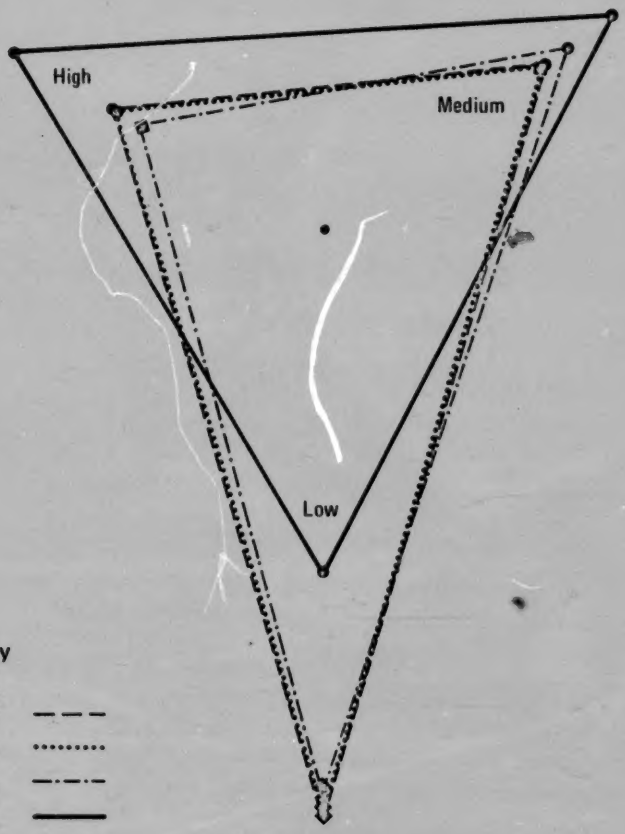


Enter Army	
Planned to	Did
Yes	Yes
Yes	No
No	Yes
No	No

Source: NLS

Figure 7

Socio-Economic Status



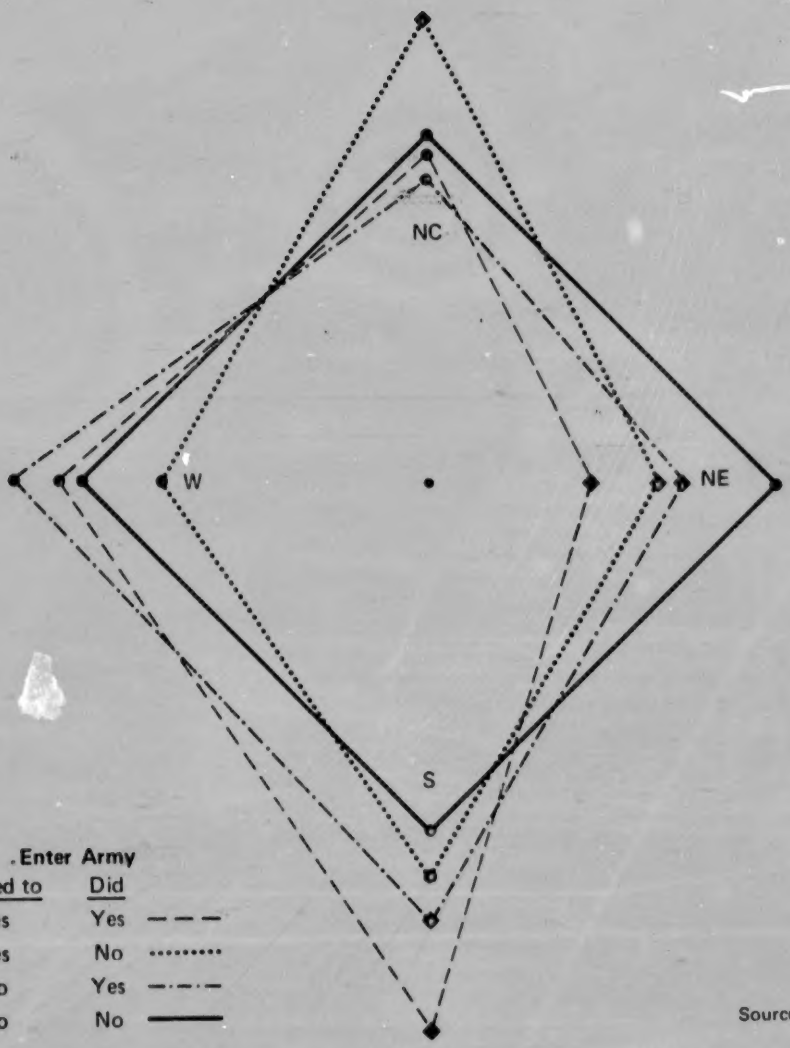
Enter Army		
Planned to	Did	
Yes	Yes	— — —
Yes	No	·····
No	Yes	—·—·—
No	No	———

Source: NLS

Figure 8

Region

NE – North East
NC – North Central
S – South
W – West



Enter Army

Planned to	Did	
Yes	Yes	– – –
Yes	No	·····
No	Yes	–·–·–
No	No	———

Source: NLS

Figure 9

Father's Occupation

Group A
Professional
Business owner

Group B
Operative
Laborer
Craftsman

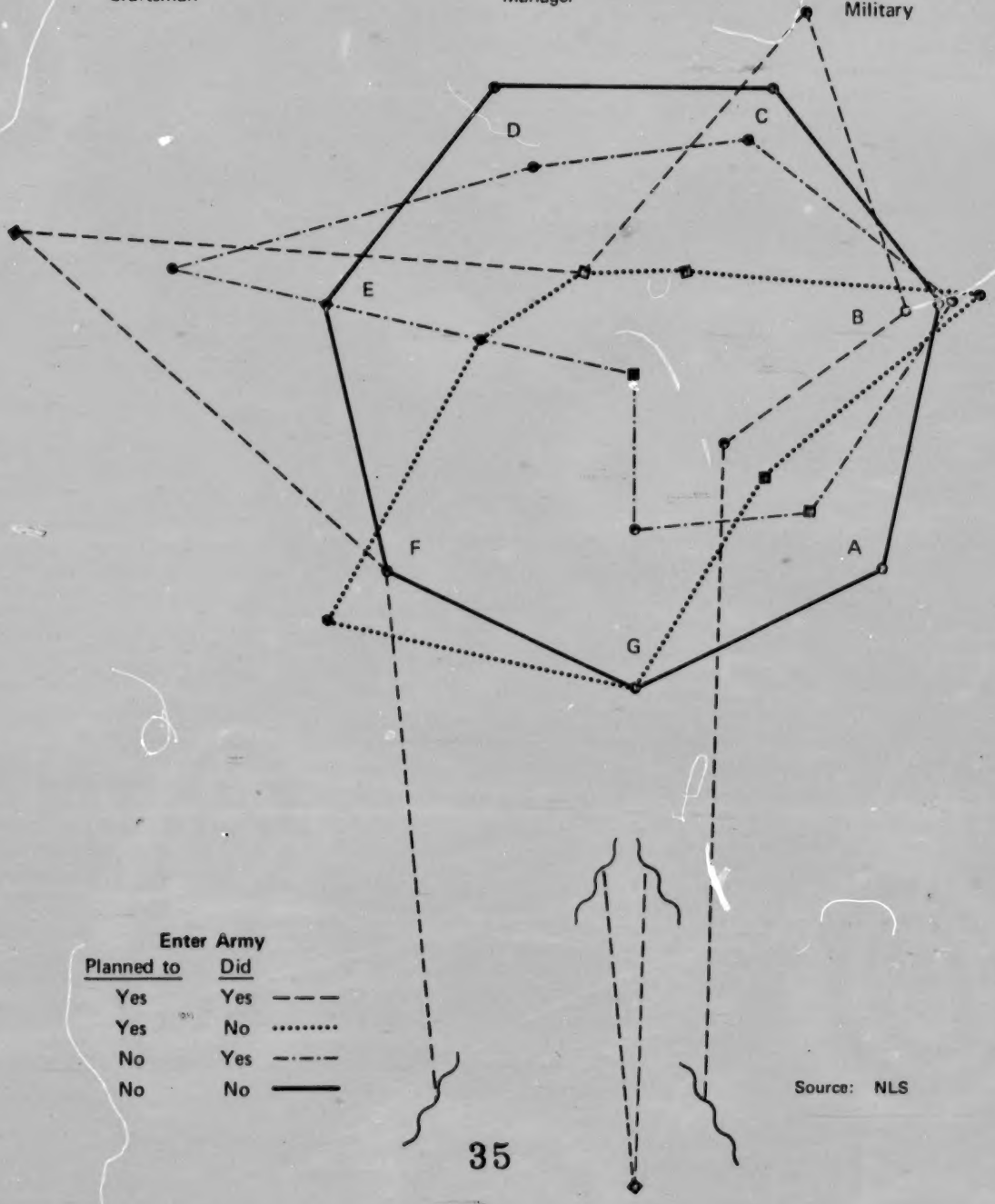
Group C
Service
Sales
Clerical
Technical

Group D
Manager

Group E
Police
Fire

Group F
Farm

Group G
Military



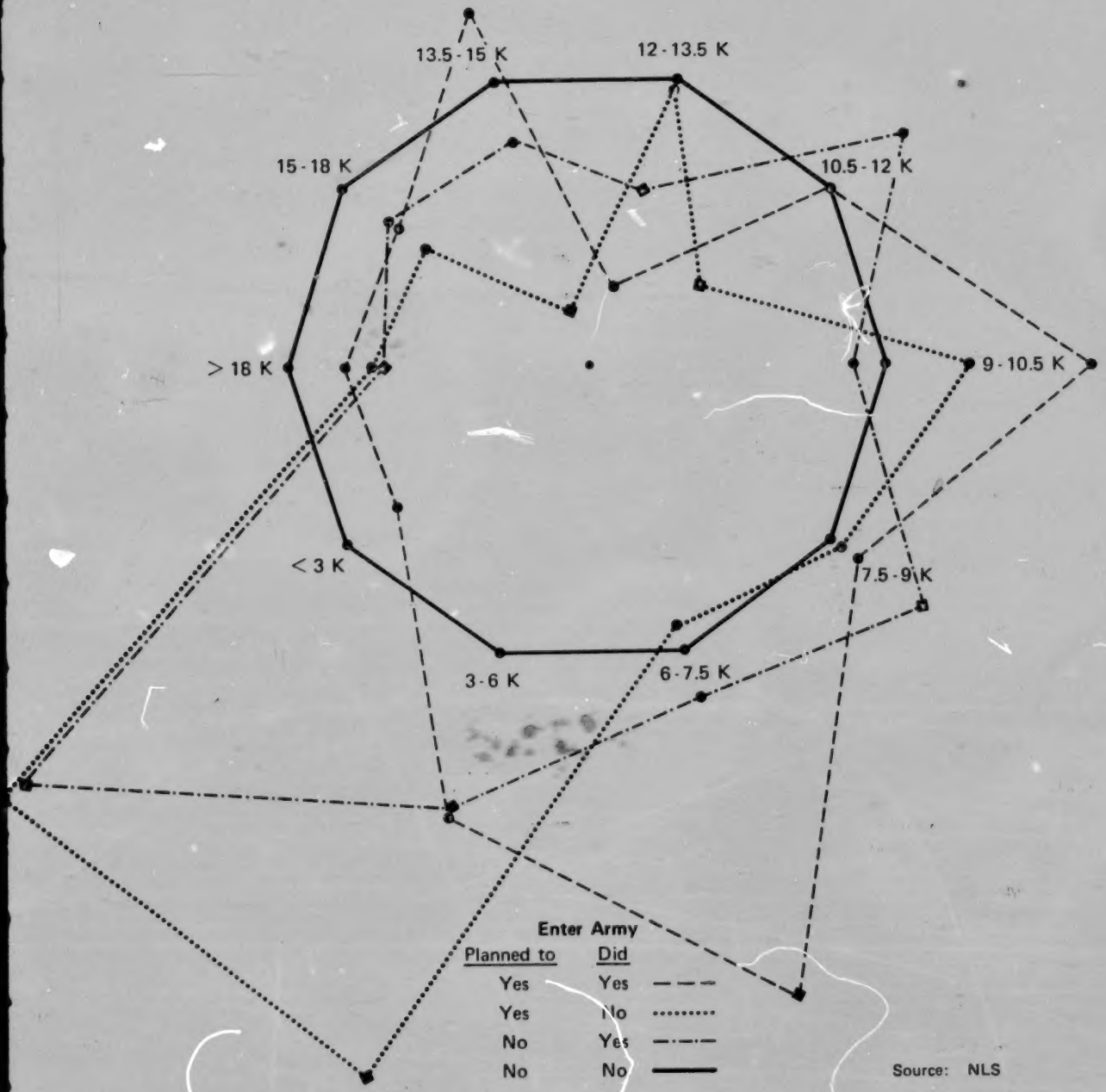
Enter Army

Planned to	Did	
Yes	Yes	— — —
Yes	No	·····
No	Yes	—·—·—
No	No	———

Source: NLS

Figure 10

Parents' Income

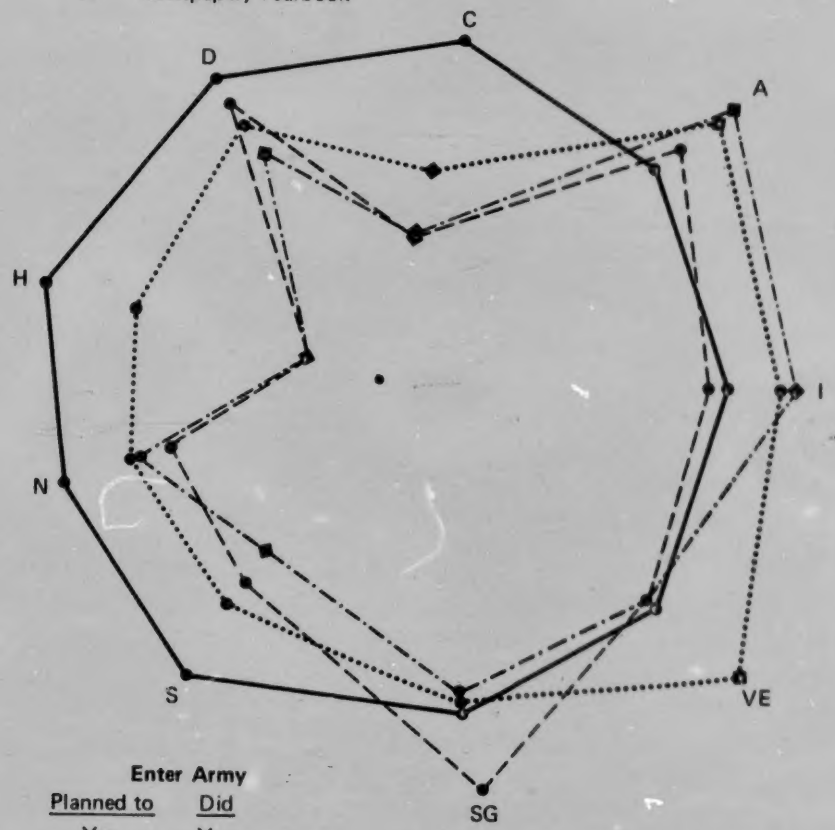


Source: NLS

Figure 11

High School Activities

A – Athletics
C – Cheerleaders, Pep Clubs
D – Debating, Music, Drama
H – Honorary Clubs
N – Newspaper, Yearbook
S – Subject Matter Clubs
SG – Student Government
VE – Vocational Education
I – Hobby Clubs



Enter Army

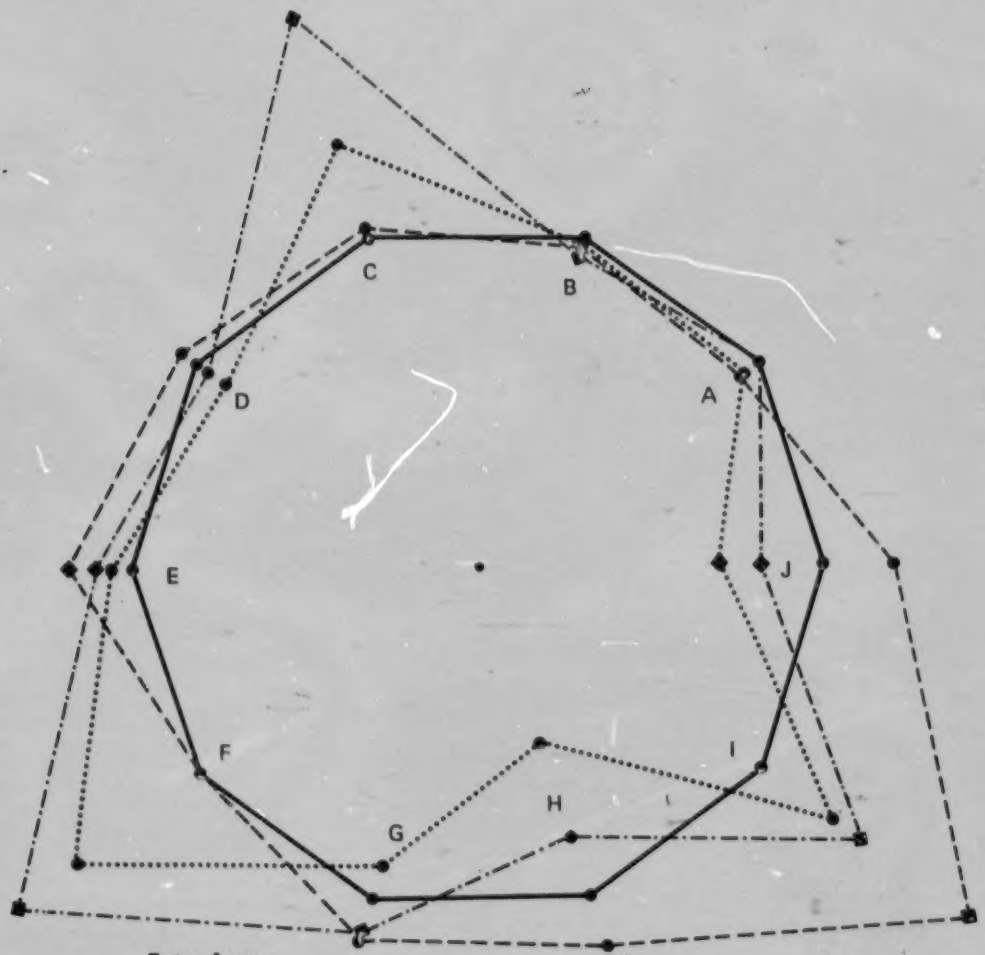
Planned to	Did	
Yes	Yes	– – –
Yes	No	.....
No	Yes	–·–·–
No	No	———

Source: NLS

Figure 12

Important Goals in Life

A – Success
B – Good Marriage
C – Money
D – Friends
E – Steady Work
F – Being Community Leader
G – Better Opportunity for Children
H – Living Close to Relatives
I – Getting Away From This Area
J – Correcting Social, Economic Inequalities



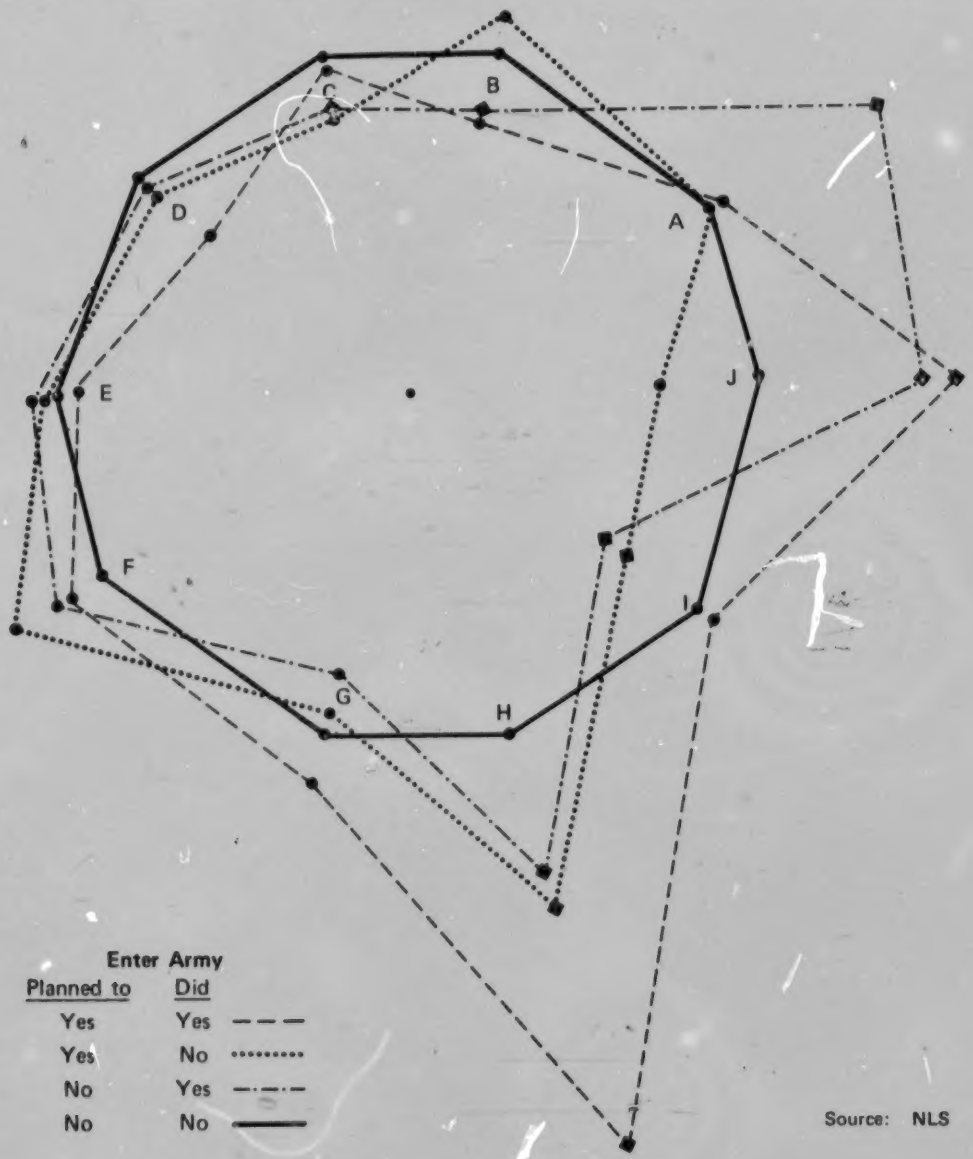
Enter Army		
Planned to	Did	
Yes	Yes	– – –
Yes	No	.....
No	Yes	–·–·–
No	No	———

Source: NLS

Figure 13

Important Factors in Selecting a Job or Career

A – Money
B – Opportunities to be Original and Creative
C – Opportunity to be Useful in Society
D – Avoiding High-Pressure Job
E – Living and Working in World of Ideas
F – Freedom from Supervision
G – Opportunity for Steady Progress
H – Chance to be a Leader
I – Working With People Rather Than Ideas
J – Position That is Looked Up to by Others



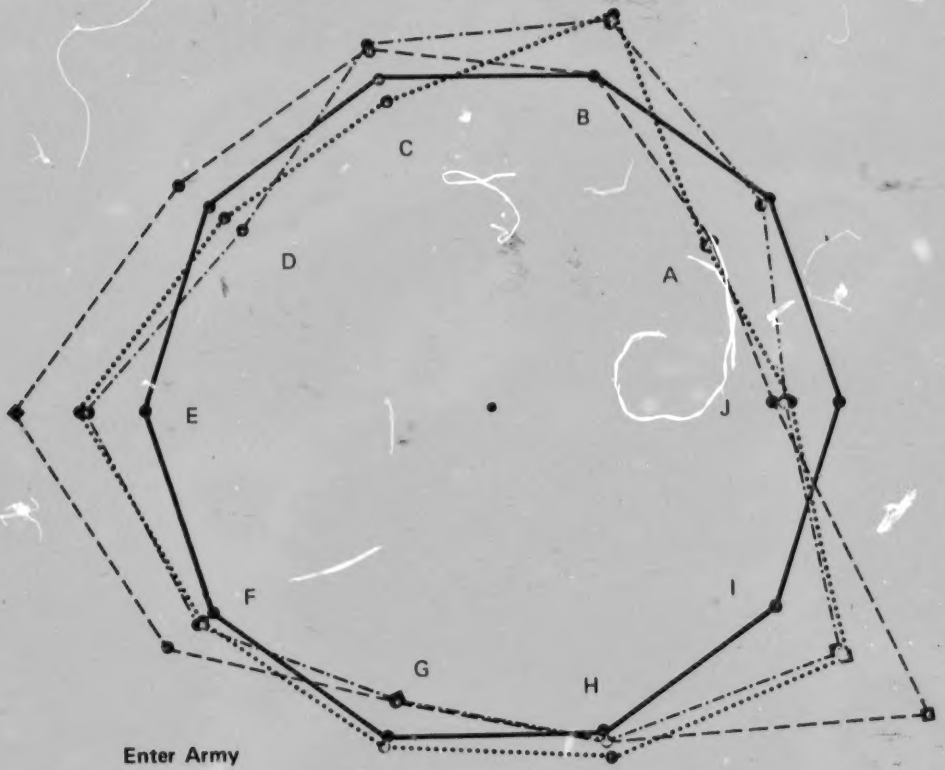
Enter Army	
Planned to	Did
Yes	Yes
Yes	No
No	Yes
No	No

Source: NLS

Figure 14

Important Factors in Determining Life's Work

A – Previous Experience
B – Relative or Friend in Same Work
C – Available for Openings
D – Work Matches Hobby
E – Good Income
F – Job Security
G – Interesting, Important Work
H – Freedom to Make Decisions
I – Opportunity for Promotion
J – Working with Friendly People



Enter Army		
Planned to	Did	
Yes	Yes	— — —
Yes	No	·····
No	Yes	—·—·—
No	No	———

Source: NLS

Figure 15

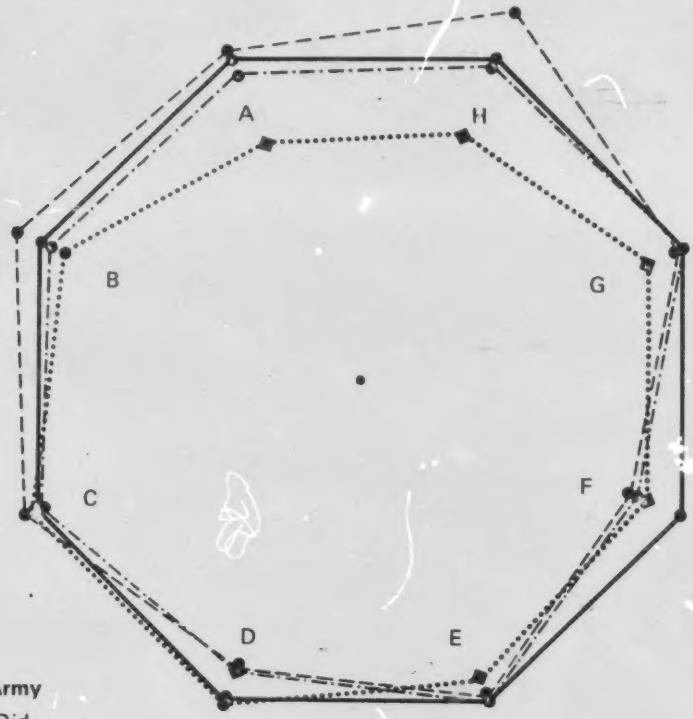
Self-Appraisal

Agree

A – I take a positive attitude toward myself
B – I feel I am a person of worth
C – I am able to do things as well as others
D – On the whole I'm satisfied with myself

Disagree

E – Good luck is more important than hard work
F – Everytime I try to get ahead something stops me
G – Planning only makes one unhappy, plans never work out
H – People who accept their condition in life are happier



Enter Army

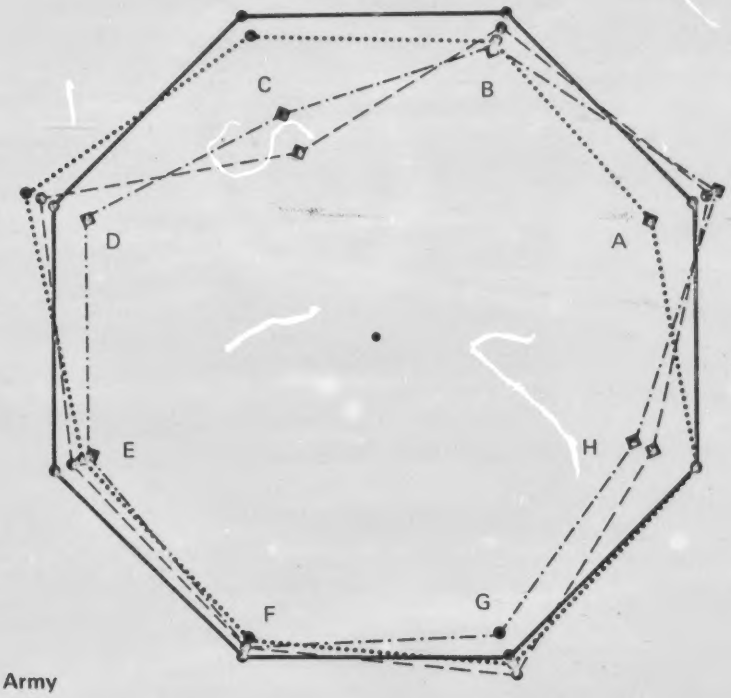
Planned to	Did	
Yes	Yes	– – –
Yes	No	•••••••
No	Yes	–·–·–
No	No	———

Source: NLS

Figure 16

Job Satisfaction

A – Pay and Fringe Benefits
B – Importance and Interest of Work
C – Working Conditions
D – Opportunity for Promotion With This Employer
E – Opportunity for Advancement in This Line of Work
F – Security and Permanence
G – Opportunity for Developing New Skills
H – Work as a Whole



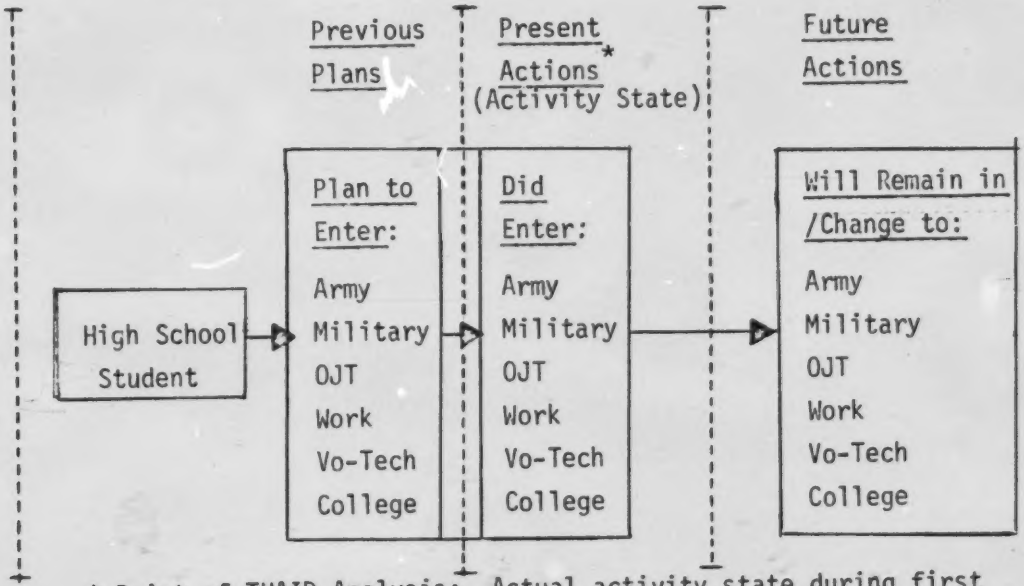
Enter Army		
Planned to	Did	
Yes	Yes	– – –
Yes	No	.....
No	Yes	–·–·–
No	No	———

Source: NLS

3.2 Diagrams Characterizing Change

THAID results appear as Figures 17 through 22. The variable chosen for comparison was "activity state" -- i.e., the individual's activity after leaving high school, subcategorized by plans vs. post H.S. actions.

These results provide interesting insights into the characteristic differences between various post H.S. groups. In order to provide a proper perspective for interpretation of this particular THAID analysis, the following flow of individuals out of high school should be conceptualized:



* Point of THAID Analysis: Actual activity state during first year after leaving high school

For the purposes of this study, comparisons can be made between the various activity state (Actions) populations, using those demographic parameters which best distinguish (i.e. provide maximum difference) among split populations. By specifically using the population which entered the Army (Figure 17) as a basis for comparison, additional information emerges as to the representative nature of the "Enter Army" group. In particular, comparisons can be made between the various "out-flow" groups -- e.g., Army vs. Work, Army vs. College -- providing an *initial step* toward

evaluation of representative micro-populations. Table 6, for example, shows that the distinguishing demographic parameters for all activity states except "Military" differ from the "Army" group on the first-level split. And, by the second level split, the Army tree even differs from its closest counterpart, "Military." Further comparisons between plan/action subgroups within each activity-state category -- too numerous for inclusion here -- also indicate the relative differences between the "Army" and other "out-flow" groups.

Of particular relevance to the present study is the apparent uniformity of the two sub-groups which entered the Army (planned to--did; not planned to--did). Examination of Figure 17 shows that, for both groups, reasonable differences in splitting patterns only begin to occur in the third level. For the "Military" activity state (Figure 18) a similar phenomenon is seen in the planned to-did subgroup -- where heavy percentages occur in the characteristics of sex (male), grades (B and C, mostly C) and father's occupation. No other activity state -- with the exception of "On the Job Training" -- exhibits such a characteristic lopsidedness to the third level split. "Vo-Tech School" (Figure 21) and "Continue School" (Figure 22) are relatively asymmetrical on the characteristics of "HS Grades" and "Aptitude," respectively -- but after this first split there is no "typical" distributional pattern.

Table 6

Thaid Results: Distinguishing Demographic Parameters *by Activity States* for NLS Respondents

Figure No.	Activity State	Distinguishing Demographic Parameters	
		1st Level	2nd Level
Figure 17	Army	Sex	Parents' Income
Figure 18	Military	Sex	HS Grades
Figure 19	On the Job Training	Father's Occupation	Geographic Region
Figure 20	Work Full/Pt. Time	Aptitude	Father's Occupation
Figure 21	Vo-Tech School	HS Grades	Parents' Income
Figure 22	College	Aptitude	Socio-Economic Status

The results of these THAID analyses are presented as tree diagrams. Each of the four groups is based on a population of 100 individuals for comparison purposes. These individuals are then characterized by sex, high school grades, father's occupation, race, parents' income, region, aptitude, and socioeconomic status. At each branch of the THAID tree, the characteristic chosen is the one which provides the maximum difference between the split populations. For example, in the graph for the activity state "Enter Military" (Figure 18) -- after the first split on sex -- observe that of the 100 people who *planned to enter and did*, only five are females and the remaining 95 are males. Of these 95 males, 81 had "average grades" (B's and C's or mostly C's), while 14 had either high or low grades (A's and D's). Of the 81, 11 had fathers who were professionals, business owners, service, sales, clerical, technical or military personnel. The fathers of the other 70 were operators, laborers, craftsmen, managers, policemen, firemen, and farmers. Splits in all activity states may be interpreted in a similar manner.

FIGURE 17

THAID RESULTS: ENTER ARMY

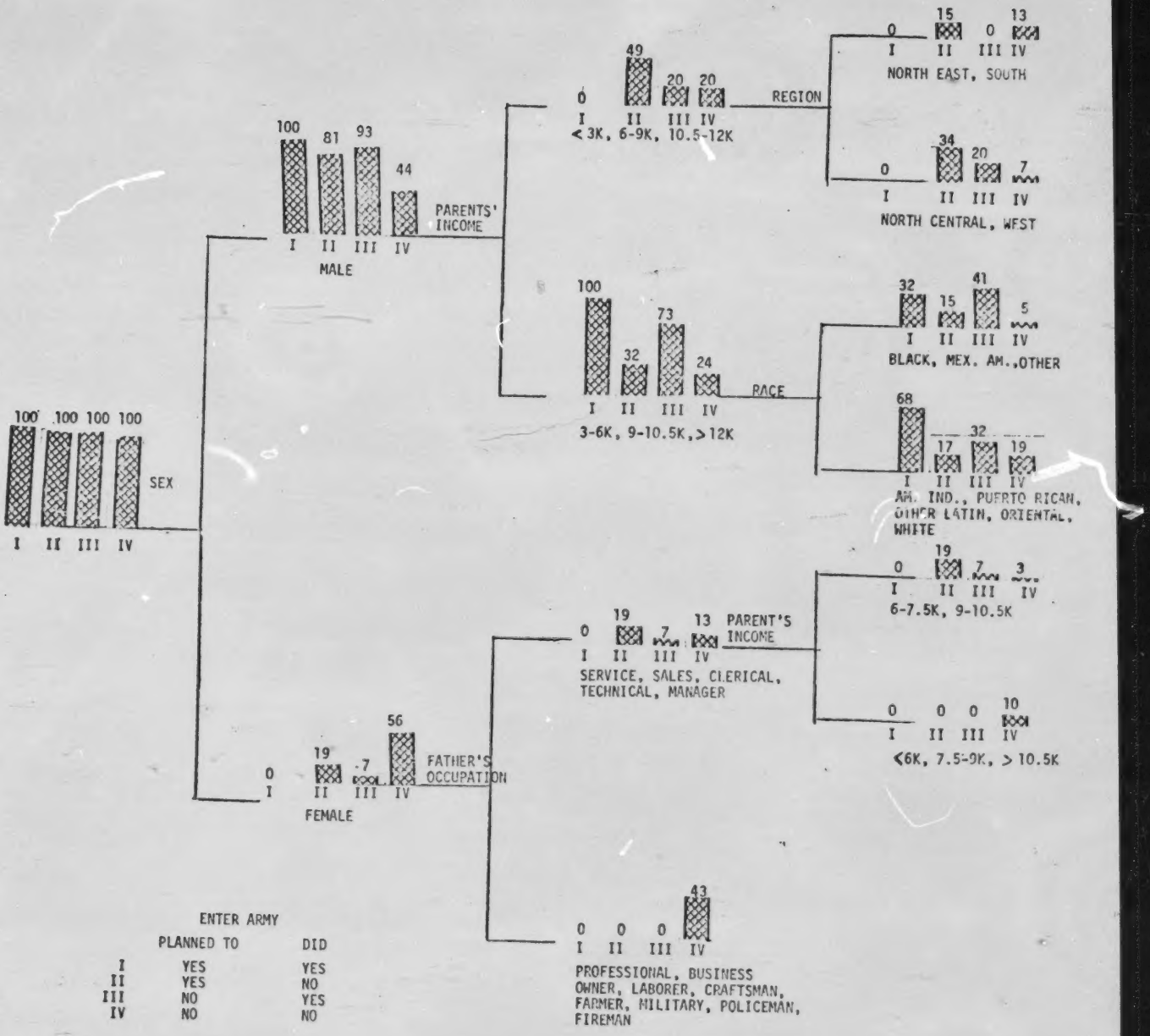


FIGURE 18

THAID RESULTS: ENTER MILITARY

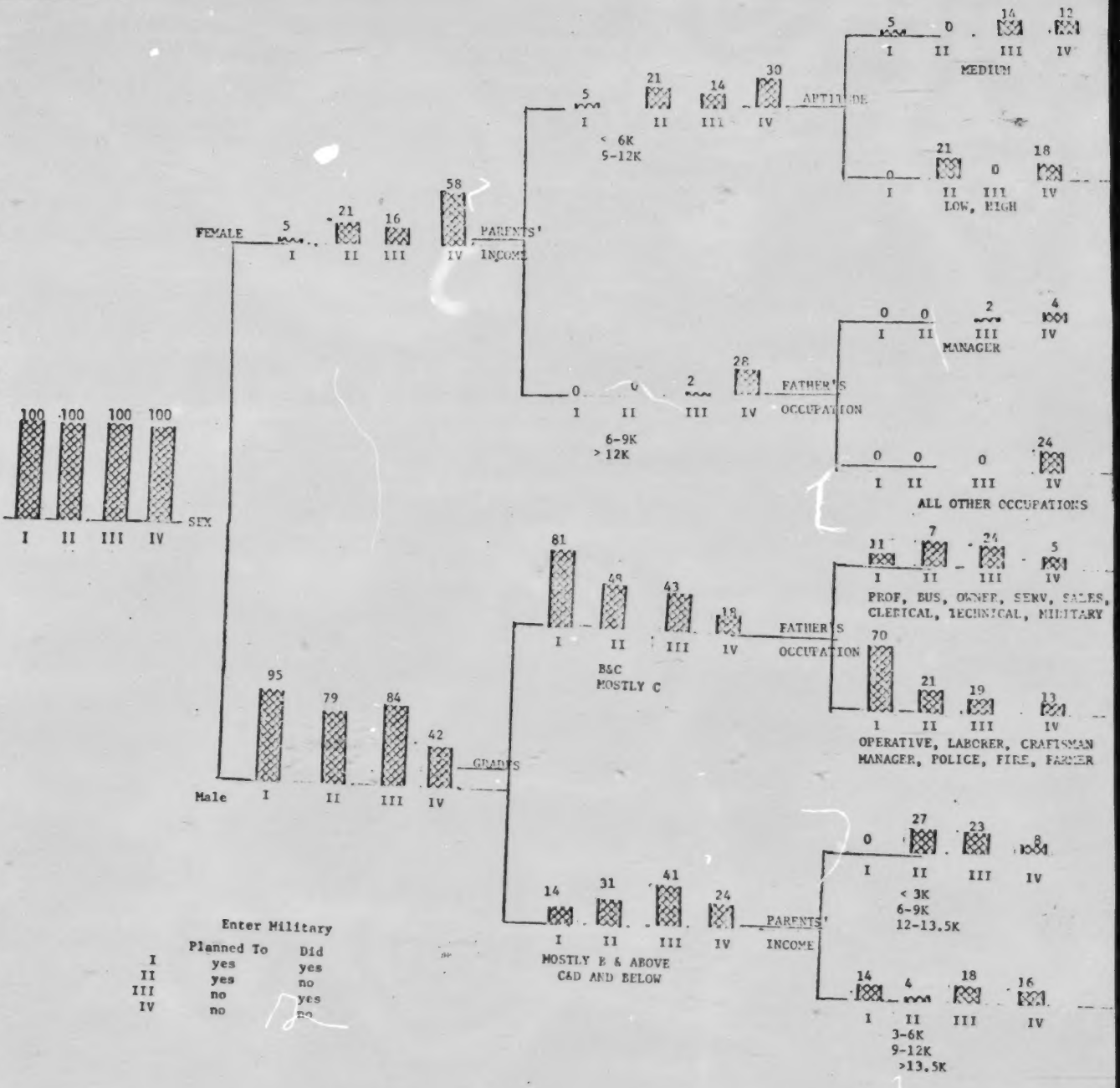
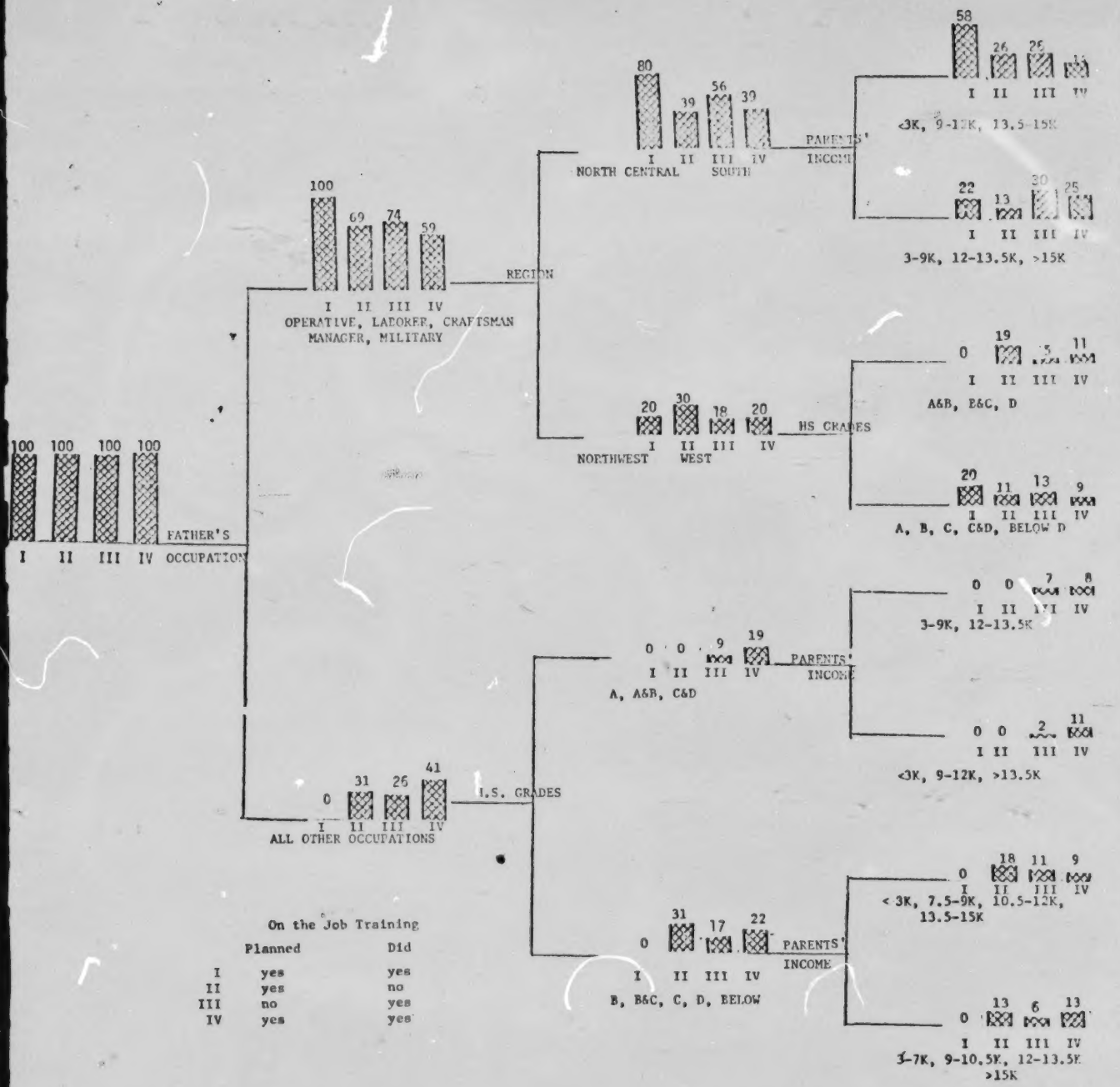


FIGURE 19

THAID RESULTS: ON THE JOB TRAINING

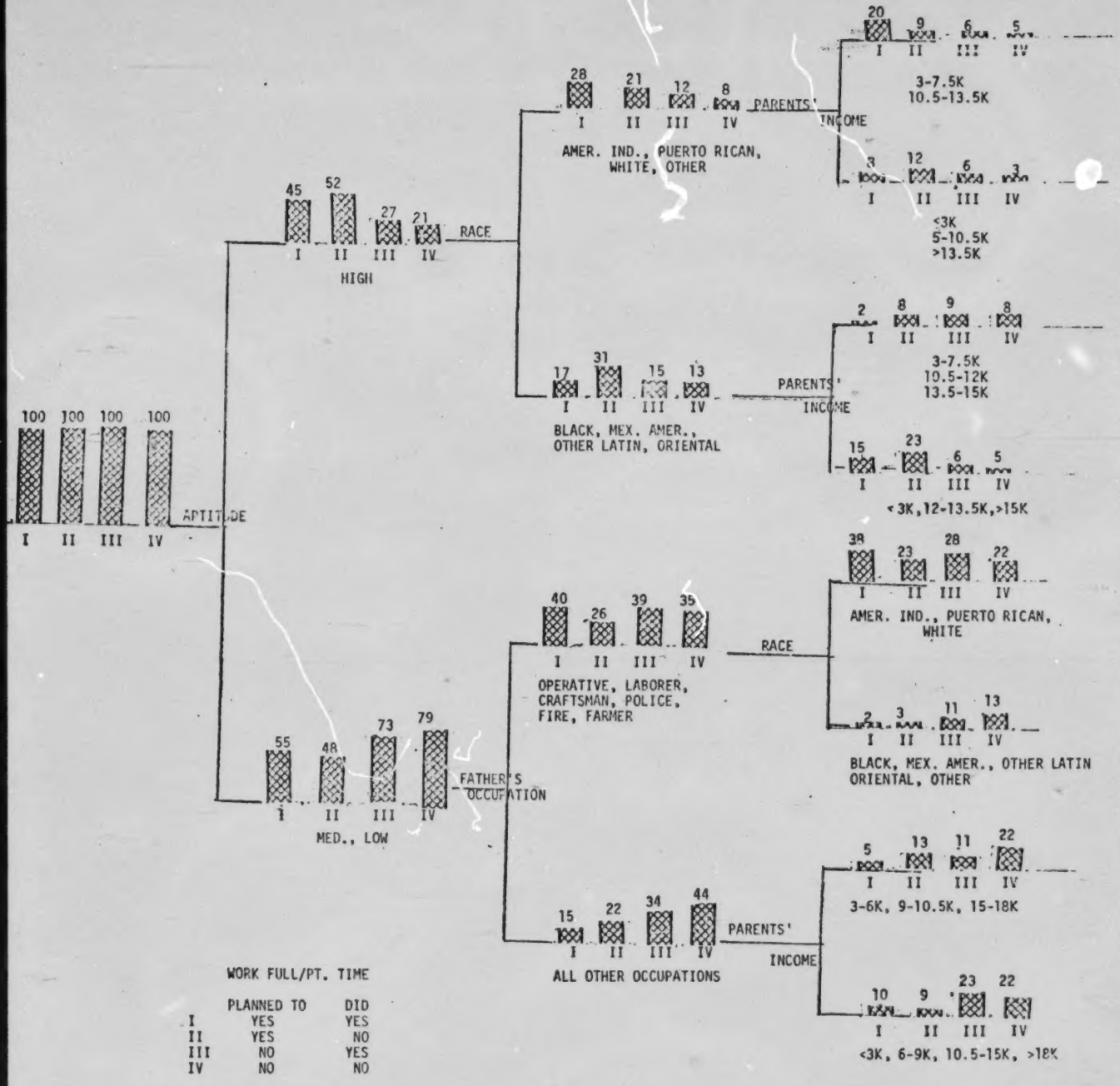


On the Job Training

	Planned	Did
I	yes	yes
II	yes	no
III	no	yes
IV	yes	yes

FIGURE 20

THAID RESULTS: WORK FULL/PT. TIME



WORK FULL/PT. TIME

	PLANNED TO	DID
I	YES	YES
II	YES	NO
III	NO	YES
IV	NO	NO

FIGURE 21

THAID RESULTS: ENTER VO-TECH SCHOOL

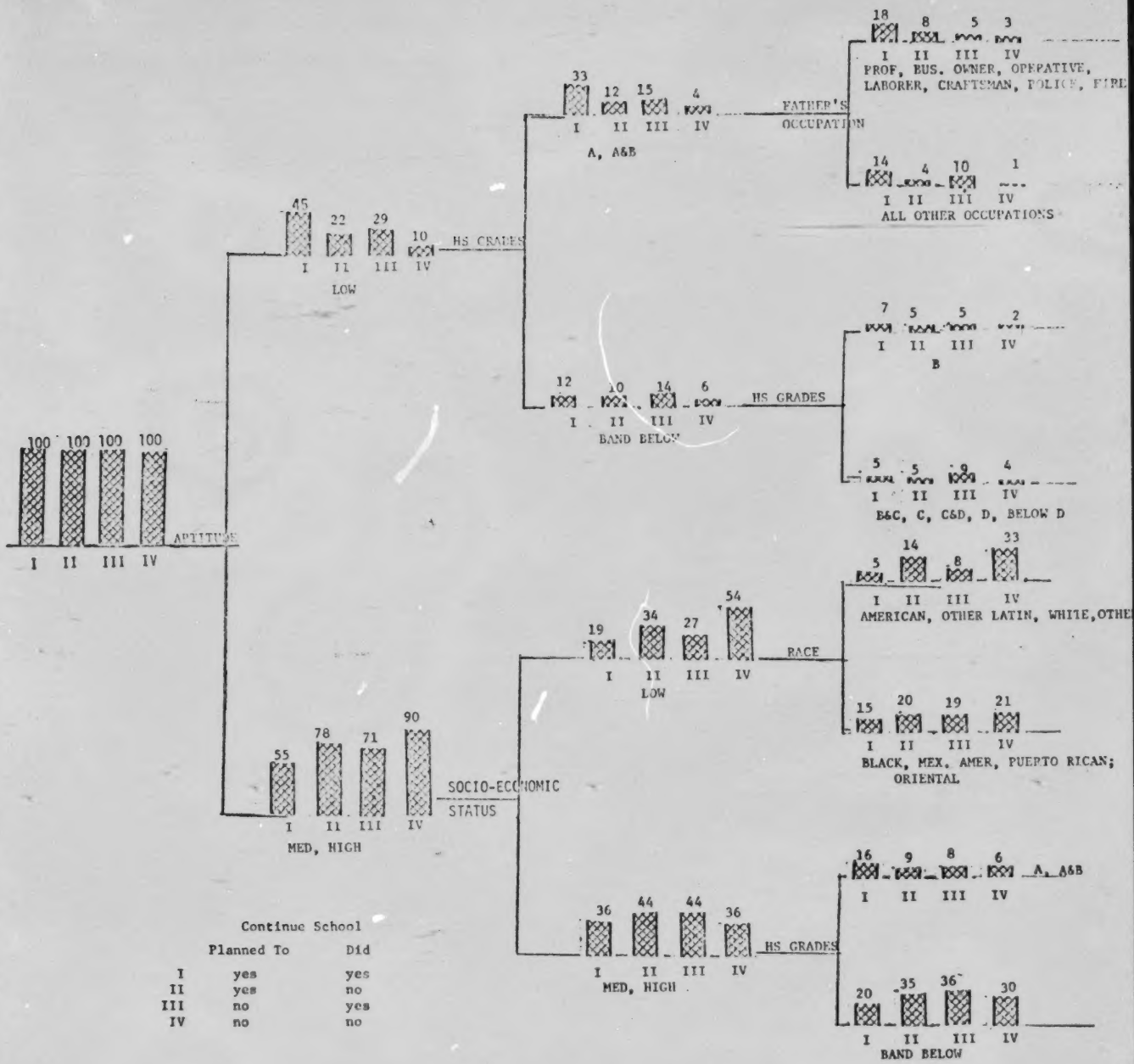
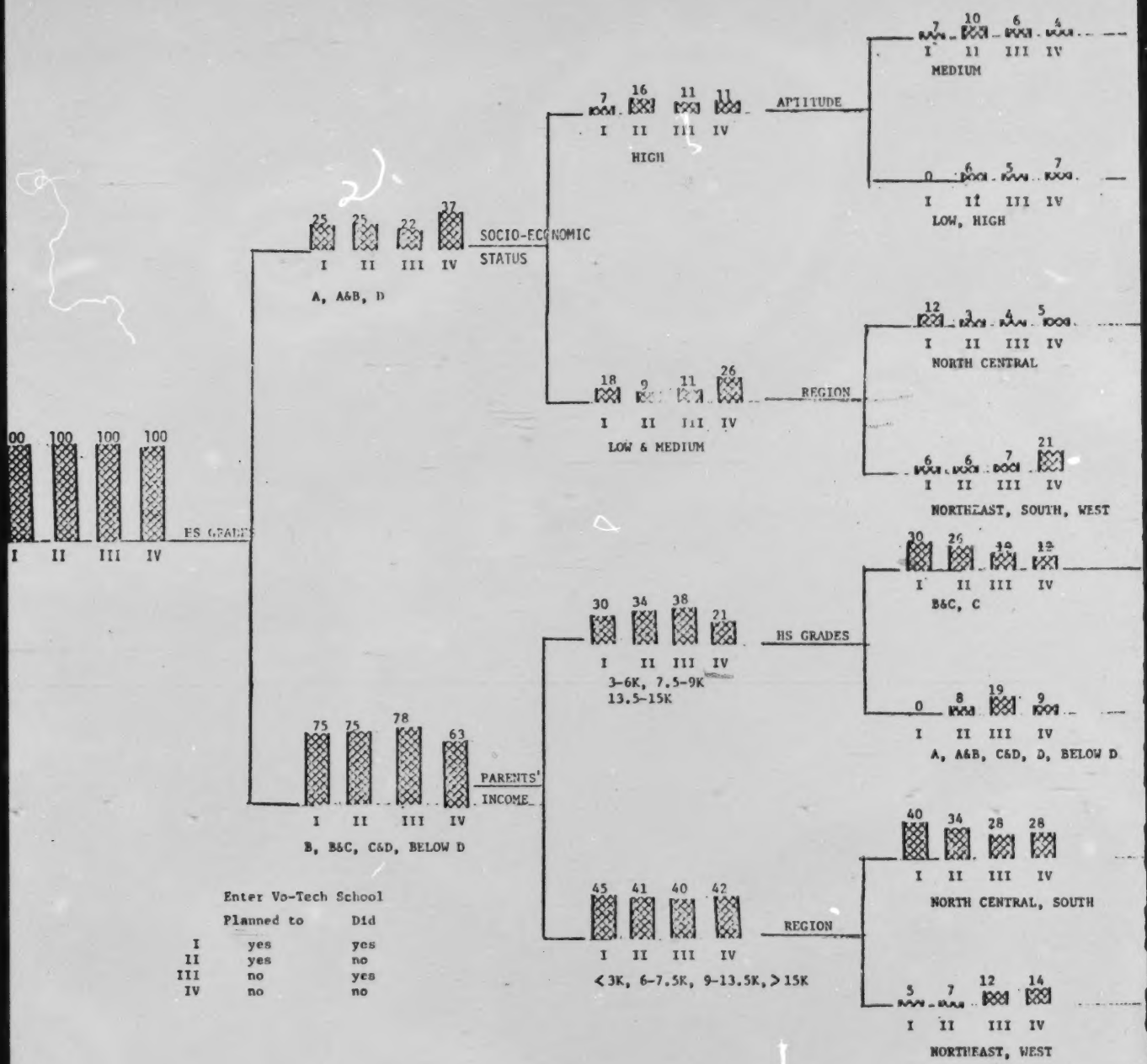


FIGURE 22

THAID RESULTS: CONTINUE SCHOOL



3.3 Attitude Changes During the Year After High School

Toward planning for representativeness it is important to evaluate *attitudinal* changes as well as -- and in conjunction with -- *behavioral* (activity state) changes. Some valuable results on attitudinal changes, for each of the four Army-relevant activity state changes, appear as Table 7.

The source for the material on attitude changes is the NLS questions BSYRQ21 and FFUQ15, where responses were elicited to the questions as stated in Table 7. The four commital responses were "agree strongly," "agree," "disagree," and "disagree strongly." The analysis which led to Table 7 began by cross-tabulating the BSYRQ21 with its FFUQ15, for each of the Army-relevant groups (defined by BSYRQ and FFUQ). Then the proportion who either agreed or agreed strongly was computed before and after; and finally, those who moved up on the scale (e.g., from "agree" to "agree strongly," or from "disagree" to "agree") were calculated, and similarly those who held or decreased.

In general, it would appear from Table 7 that youth have a positive attitude which increases somewhat after leaving school. Those who enter the Army seem to be about like their peers, before entry but to improve their attitudes somewhat more than their peers during early Army service.

The responses to "On the whole, I'm satisfied with myself" have a distinctively separate pattern from the other three (which are very similar in structure). The Army entrants seem to be less self-satisfied by quite a margin (75 or 74 vs. 82 or 83) over their peers who did not enter the Army. This same level appeared back in high school for those who had then intended to join the Army, but the Army "gains" were like their non-Army peers during high school and then became like their Army peers after having joined.

Table 7

Attitude Changes in Army-Relevant Groups

Do you agree that		Army Relation: Planned to Enter	Army Relation: Did Enter	The Proportion Who: Agreed or Agreed Strongly While in HS	In the 18 Mos Period Agreement: Increased	In the 18 Mos Period Agreement: Stayed The Same	In the 18 Mos Period Agreement: Decreased	Agreed or Agreed Strongly After 18 Mos
I take a positive attitude toward myself	I	Yes	Yes	86%	32%	61%	8%	100%
	II	Yes	No	75	32	63	5	93
	III	No	Yes	87	35	52	13	97
	IV	No	No	86	28	57	15	94
I feel that I am a person of worth	I	Yes	Yes	96	40	41	19	100
	II	Yes	No	89	33	54	13	96
	III	No	Yes	93	34	50	15	97
	IV	No	No	94	25	59	16	97
I am able to do things as well as others	I	Yes	Yes	92	37	62	1	100
	II	Yes	No	98	22	69	9	99
	III	No	Yes	94	28	59	13	97
	IV	No	No	92	25	60	15	96
On the whole, I'm satisfied with myself	I	Yes	Yes	64	29	44	27	75
	II	Yes	No	76	30	54	16	82
	III	No	Yes	73	26	48	25	74
	IV	No	No	76	28	54	18	83

3.4 The NLS in Context with Total Enlistment Trends

The NLS data profiles the *high school graduate* accessions of *FY73*. We can place this group in context by asking: First, how do the non-high school graduate accessions compare with the high school graduates? Second, how do the current accessions differ from the FY73 accessions? The AFEES surveys from FY73 through FY75 were used to evaluate these questions. This information is presented in Table 8 and Figures 23 and 24.

Table 8

Army Accessions FY73-75
Percentage Distributions
(Each vertical block totals 100%)

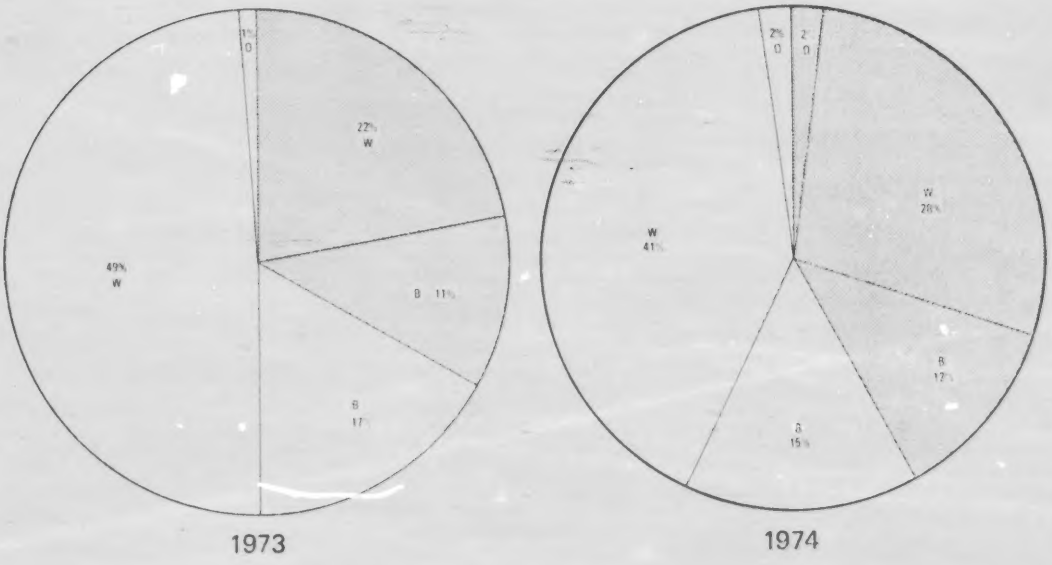
	1973		1974		1975	
	NHSG	HSG	NHSG	NSG	NHSG	NSG
Race						
Black	32	25	29	25	20	20
White	67	73	66	70	73	72
Other	1	2	5	4	7	8
Age						
17	25	11	32	8	33	10
18	40	36	30	37	35	18
19	16	21	14	21	13	18
20	8	10	7	11	6	13
21+	11	22	16	24	12	41
Sex						
Female	5		9		3	12
Male	95		91		97	88

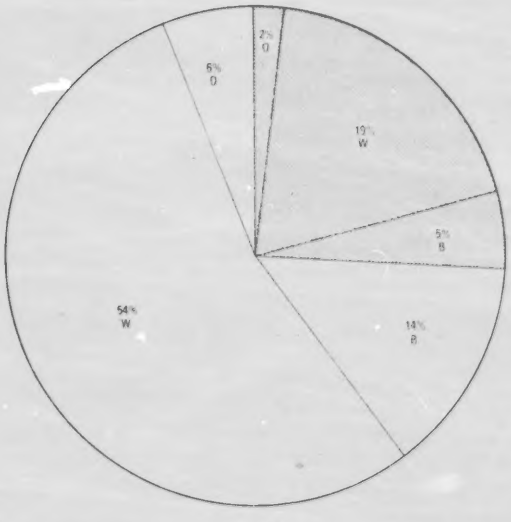
The racial composition of Army accessions by educational level is graphed in Figure 23. The circle graph from 1975 presents some information deserving of special mention. 54% of the 1975 accessions were White high school graduates and only 5% Black non-high school graduates, in contrast to 1974 with only 41% White high school graduates and 12% Black non-high school graduates. Only 26% of the 1975 accessions were non-high school graduates while the 1974 accessions included 42% non-high school graduates. The percentage of Black accessions in 1975 was 19%, a substantial decrease from 26% in 1973 and 27% in 1974. The minority gain in 1975 was 27% of total accessions -- not too different from the 29% of 1973 and 31% of 1974. However, 1975 showed a large increase in the percentage of "other minorities" enlisted -- from 1% in 1973 and 4% in 1974, to 8% in 1975.

Figure 24 presents the distribution of accessions by age and educational level. Once again, the 1975 graph shows a dramatic change in accession patterns. 30% of the 1975 accessions are high school graduates who are 21 years of age or older, compared with 15% in 1973 and 14% in 1974.

Figure 23

Percentage Distributions -- Army Accessions by Race FY73-75



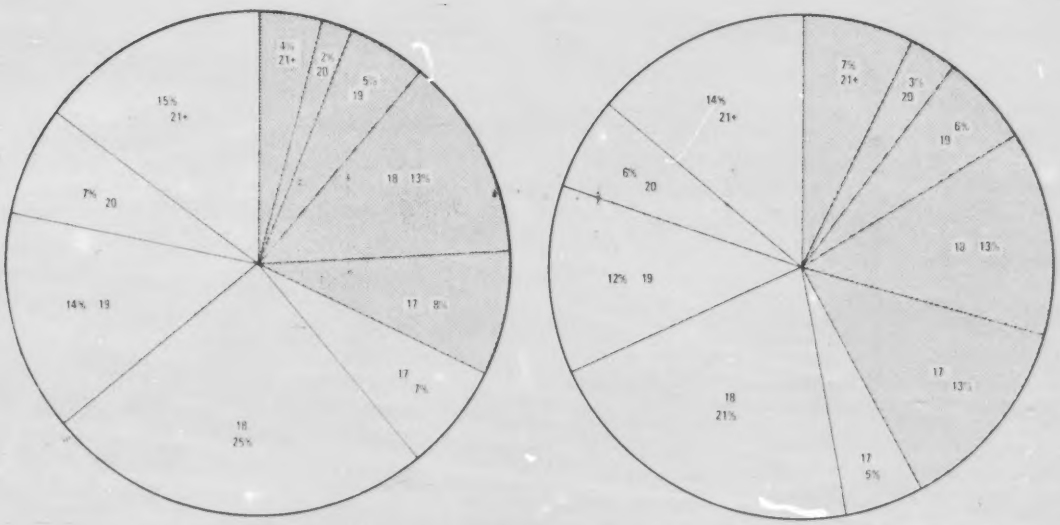


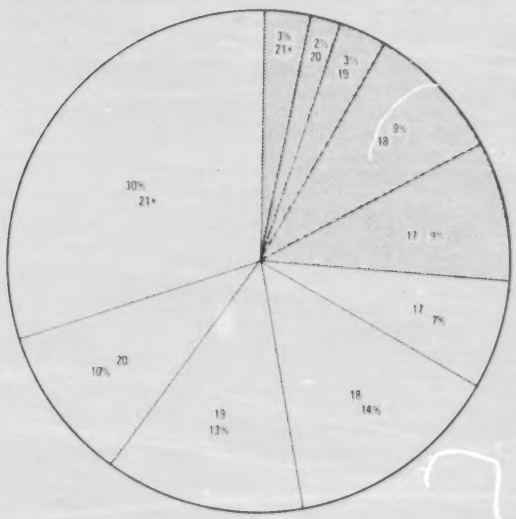
Non-High School Graduates
High School Graduates
Source: AFEES Survey

W - White
B - Black
O - Other

Figure 24

Percentage Distributions -- Army Accessions by Age FY73-75





Non-High School Graduates

High School Graduates

Source: AFEES Survey

4. Current Assessment

The Concept of Representation

Although the concept of a "representative" Army is basic to the theory of democratic government, it can probably be said that no American Armed Force has ever achieved such status. This is especially true if "representative" is taken to include the officer corps or if "cross-section of society" is so defined to include women. Notwithstanding these more obvious deviations of representation is the simple understanding that the draft does not, in itself, *guarantee* a representative social configuration in the ranks of the Army.

Prevailing political and social attitudes have throughout history modified popular understandings of who should serve in the military. There have always been exemptions to total conscription. In early draft history, "buying out" was an accepted practice. In later years, the inclusion of "deferred-status" exemptions significantly reduced the cross-sectional character of the ground forces. The fact that the Armed Forces were segregated and reflected the worst racial attitudes of society for many years is also frequently overlooked in current discussions of cross-sectional representation.

Theoretically, "true" representation should include proportionate numbers of population subgroups. The concept of representation remains vague, however, because there are various interpretations of what constitutes a "subgroup" and how many "cross-sections" of society should be partitioned. And, although many sociopolitical theories of equity support the basic concept, serious questions have been raised regarding optimal effectiveness.

One problem may be that the issue of representation is much more complex than that which is presented in most normative sociopolitical commentary. Consider the possible -- though improbable -- likelihood of having *overly large* numbers of highly intelligent, well-educated, highly motivated, and economically successful individuals in the Army's combat arms. This *over*representation of high-ability individuals could be criticized on the grounds of *political legitimacy* and *social equity*. But, how many proponents

of "true" representation would claim that *this* disproportionate configuration is contrary to the goals of *military effectiveness*? If, in fact, it cannot be said that overrepresentation of high-ability individuals is detrimental to military effectiveness, why can it be said that the *opposite* is true -- i.e., that overrepresentation of low-ability individuals will lower the overall effectiveness of the Army?

This progression of logic regarding military effectiveness can be made for every demographic measure of representativeness -- and questions the suitability of Army effectiveness as an issue of representation. The point has been made that the Army *needs* those individuals who *best accomplish* its mission. These individuals may be overrepresentative of the poor, under-educated, and racial minorities -- but as long as they are *qualified volunteers*, it is often argued, proportionate social representation does not matter: "Qualified volunteers make good soldiers because they *are* qualified." The point has also been made that optimal levels of job-productivity exist -- that is, the point at which "qualified" becomes "over-qualified" -- and attempts to achieve increased levels of quality accessions are no longer cost-effective.

There are probably limits to how representative the Army can ever be expected to become -- as there are limits to representation in any organization. In theory, concerns regarding political legitimacy and social equity issues are well-founded. The issue of military effectiveness, on the other hand, does not appear to be directly affected by the representative nature of the Army. There is as much truth in claiming that the Army rank-and-file should (for the purposes of effectiveness) "represent" individuals of (for example) superior intellect as there is in saying the Supreme Court should (for example) represent mediocrity.[1/] For most criticisms offered in behalf of the "mixed (draftee) force", it should also be mentioned, an equal number of counter-arguments can be garnered. Perhaps the major policy goal should be aimed at keeping the social configuration of the Army -- particularly the officer corps -- from becoming *highly unrepresentative*.

1/ One U.S. Senator, during the confirmation hearings of a 1970 nominee to the Supreme Court, did claim that "mediocrity has its place" on the Supreme Court because it *represents* an important part of society.

The NLS Parameters of Representation: Requirements vs. Supply

Even though the expressed *requirements* for representation are vague and frequently ambiguous, the concept itself may be said to be directly tied to issues of manpower supply. Exploratory analysis of National Longitudinal Study data does provide a step toward the development of *comparative supply measures* -- the crucial ingredient for both evaluation of current representation issues and the establishment of policy objectives. The quantitative supply issues of Sections 2 and 3 are summarized in the following discussion, therefore, by the requirements issues of Section 1.

It should be noted that the great number of combinations and permutations of population measures, submeasures, enlistment plans and behavior, etc., precludes an evaluation of all population characteristics and the nuances of relationships. The use of new graphical techniques was particularly aimed at providing the reader with easily interpretable evidence -- and most comparisons of Army populations with their counterparts in civilian society are expected to be largely self-apparent in the "snowflake" format. It should also be noted, in reviewing graphical data, that the NLS is reflective of the high school class of 1972 -- a representative sample of young people, taken from a specific point in time (i.e., during the period of transition to a volunteer force), and affected by exogenous factors which have changed.

Political Legitimacy

The several concerns which pertain to *political legitimacy* are perhaps the most serious of all representation issues. Although the issues of *social equity* strike hard against the moral consciousness of society -- and *military effectiveness* relate to problems of national defense -- the creation of an isolated politico-military institution is antithetical to the most basic tenets of democratic government.

An important part of this criticism is the theory that a typical military ethos will develop from certain predictable patterns of enlistment. The most glaring evidence in support of the *self-recruitment* issue appears

in Figure 9, "Father's Occupation." Among the "always" enlistees (planned to enter -- did enter), an incredibly large proportion are offspring of military men. In the next level also, sons of policemen and firemen -- more or less para-military professions -- show proportionately higher attraction to the Army (among all enlistees).

There are many intervening variables between the social origins of professional groups and patterns of sociopolitical behavior. Nevertheless, the argument is frequently made that the processes of socialization -- including professional military socialization -- have a strong effect on the conditioning of attitudes (e.g., regarding the legitimacy of civilian-military relationships). The overrepresentation of military offspring is thereby expected to strengthen traditional military perspectives.

This argument is also supported by regional representation. Examination of Figure 8, "Region," shows a higher proportion of true enlistees (and those who changed their minds) coming from the South and West. The regional self-recruitment argument is founded in the understanding that there is a higher acceptance of the military in the South and Southwest -- where there are stronger ties with military installations, and where most soldiers supposedly find wives and eventually retire. Concerns regarding the "isolated" regional appeal of the Army in the South are further strengthened by the apparent *opposite-effect* among similar enlistee groups in the North East -- where proportionate appeal may be lowest.1/

1/ A point for further study regarding future recruiting efforts may be the original interest (planned to -- did not enter) shown by the North Central population -- and their reasons for subsequent disinclination.

There is no way to specifically address the issue of an individual's political philosophy in the NLS data; however, inferences may be made from several of the parameters.[1/] One indicator of attitudes is the measure of "Important Goals in Life." Figure 12 shows a high proportion of hard-core enlistees stressing the importance of "getting away from this area" -- and a relatively high proportion of individuals (though not statistically significant) expressing interest in correcting society's inequalities. The desire to "get away" is dubious, but it does show a non-provincial or cosmopolitan leaning. Correcting social inequities (as a goal in life) is also uncharacteristic of the conservative/right-wing "type".

Among those enlistees who changed their minds, the disproportionate interest in "money" as a goal in life (Figure 12) does not do much to contradict concerns regarding overrepresentation of *self-seeking mercenaries*. Although "money" (cf. also "money" in Figure 13, "Important Factors in Selecting a Job or Career") may seem to be a strong inducement for the enlistment of those who do not originally plan entry, "leadership" is also a significantly strong incentive (cf. Figure 12 -- "being a community leader" and Figure 13 -- "chance to be a leader"). The desire to be a leader may indicate a lower propensity toward unquestioning conformity, i.e., within a prevailing "ideological cast" (though this is a purely subjective appraisal).

Other indicators of unrepresentative attitudes among enlistees are shown in Figure 14. Monetary-related factors are also higher in "Important Factors in Determining Life's Work": "opportunity for promotion" and "good income" are disproportionately higher for both groups of enlistees.

Social Equity

The demographics of social equity are easier to define than those in either of the other issue areas. Data on NLS race distributions (Figure 6), for example, show a disproportionate enlistment representation of Blacks (both groups) and an *opposite pattern* for "Other" racial minorities. Especially noticeable is the high proportion of Black enlistee "gains".

1/ Relevant statistics could also be drawn from the field of Political Science to estimate the incidence of certain political attitudes among various subpopulations -- e.g., by socioeconomic status, level of education, region of origin, etc. -- but results, as applied to Army enlistees, would be highly conjectural.

The substantial difference between the "Other" race groups -- especially the very high proportion of planned-to-enlist/did-not and lower proportion of "always" enlistees -- is probably the result of high Army rejection rates for applicants in this population category.

Equally important to the issue of social equity is the measure of socioeconomic status. Figure 7 shows the overrepresentation of all three comparison groups in the "low" status level -- and the underrepresentation of all groups in the "medium" and "high" levels. The proportion in the "high" status category, however, are probably greater than expected.

Indicators of social equity also appear in Figure 10, "Parents' Income." Exceptionally many of these who changed their plans in order to enlist ("gains") have parental income at the poverty level. As the parental income increases, the proportion for "gains" drops down. Among "always" enlistees, the pattern is somewhat different. Markedly higher unrepresentativeness is shown at the 6-7.5K level and generally at other levels between 3 and 10.5K. Also noticeable is the initial interest of those in the 3 to 6K category who eventually did not enlist. Other particularly relevant measures are those in Figures 12, 13, and 14 -- where monetary incentives seem to show high attraction among enlisted populations.

The implications of this data seem to substantiate criticism regarding social equity. The NLS Army populations are significantly overrepresentative among Blacks and less-privileged members of society. Recent enlistment trends do show otherwise, however. Recent volunteers are more representative of upper-lower to upper-middle class families -- i.e., those whose incomes follow national distribution patterns. Black enlistments are still unrepresentatively high -- though less than the NLS tends to show. Representation waivers markedly with the ratio of supply to requirements.

Higher pay incentives also appear strong among NLS Army groups. Inference must be made, however, as to whether these particular populations are being "economically conscripted." Evidence that members of the lower social strata are being "pushed" into the military by exogenous social/economic factors is probably indicated in overrepresentation measures of those who did not originally plan to enter the Army but eventually enlisted. In each category -- race (Black), socioeconomic status (low), parents' income (3-7.5K), and monetary incentives -- there is strong evidence to suggest

that the poor and racial minorities *compromised* in favor of enlistment for some reason (e.g., social, economic or fewer civilian alternatives).

The equally high overrepresentation measures of those who planned to enlist but did not can probably best be explained by Army statistics on the rejection of applicants: the very poor are mostly unable to qualify, either for physical, mental, or moral (i.e., police arrest records) reasons.

Military Effectiveness

The demographics of effectiveness include the standard measures of minority status (discussed above) and education/intelligence. Equally relevant -- and perhaps even more critical to internal organization effectiveness -- are the measures of attitudes, job satisfaction and self-appraisal. Aside from the more obvious limitations of the NLS parameters in measuring the overall quality of working life, is the understanding that very little time has passed between entry into the Army and the time of survey administration for Army enlistees. The opinions and attitudes expressed by the enlistee respondents (as well as the non-enlistment population) would not be expected to drastically change between administrations of the Base-Year and First Follow-Up surveys. For the most part, strong changes in attitudes regarding work or self-appraisal, therefore, were not anticipated.

The actual measure of attitudes, as shown in Figures 12 through 16, does show a pattern of consistency for Army enlistees. Monetary factors are, without exception, important to those individuals who enlist in the Army (Figures 12, 13, 14, 15). Factors which relate to leadership and self-assertiveness are also overrepresentative qualities among Army entrants (Figures 12, 13, 14, 16).

Notable also is the large proportion of enlistees who aspire to find a "position that is looked up to by others" (Figure 13). This is understandable, if the assumption is made that a high percentage of young men from lower socioeconomic families look to the Army as a channel for social mobility. For those people who enter with *overly* high aspirations and expectations, however, the likelihood is greater for disenchantment, disappointment, and eventual dissatisfaction. This may especially be true

of those who are trapped in intolerable life situations, and look to the Army for dramatic changes. This might also provide one explanation as to why "Job Satisfaction" indicators (with the exception of pay factors) are generally lower for categories among Army enlistees (Figure 16). This is noticeably true for "working conditions," where "always" enlistees show surprisingly lower results.

A much more objective measurement of effectiveness may come from the quality indicators of "Literacy Level," "Aptitude," and "High School Activities." For both "Literacy Level" (Figure 1) and "Aptitude" (Figure 5) there is a disproportionate representation of less intelligent individuals who did not originally plan to enter the Army[1/]--although "always" enlistees are much more representative (especially at medium levels of intelligence [Figure 5]). As expected, there is also a correspondingly unrepresentative proportion of enlistees at the highest levels of aptitude.[2/]

Another indicator of quality representativeness may be seen in "High School Activities" (Figure 11). Generally, Army enlistees are less active in high school extra-curricular activities. This is especially true for the academic-related activities -- e.g., honorary clubs, subject matter clubs. Once again, however, there are over-representative populations in the athletic and leadership categories (and probably most desirable from the Army's standpoint).

1/ The high proportion of individuals who planned to enter (and did not) in these two categories is assumed to be mostly the result of applicant rejection by the Army.

2/ At present, the *average test scores* of volunteers are actually higher than those of the draft period. This is attributable to the fact that there has been a "tightening effect" occurring in the middle range: percentages of enlistees with below-average scores and percentages of enlistees with above-average scores have decreased; the percentage of Group III enlistees (with average and slightly above-average scores) has increased considerably.

Summary

The current assessment of the supply and requirements for representativeness is designed to be a starting point for further research. Present efforts were largely exploratory and directed toward the definition of problems, specification of objectives, and the initial development of performance measures.

Present analysis of NLS data has been restricted to the requirements categories developed in Section 1. Percentage distributions do show, however, that NLS Enter-Army populations differ from their civilian counterparts in several areas (Section 2.2) -- and that the areas of greatest deviation are also the areas of greatest concern among observers of the volunteer environment (Section 1.2). THAID analysis also shows that the distinguishing characteristics of NLS Army entrants differ substantially from other activity-state entrants -- and that the configuration of the NLS Enter-Army population may be more homogeneous than any other post H.S. activity-state subgroup (Section 3.2). The present comparison of supply and requirements variables remains inconclusive, nevertheless; the objectives of "representativeness" are as yet sufficiently obscure to cloud definitive findings.

Initial evaluation of attitudinal information shows that Army entrants are similar to their peers in self-appraisal characteristics, and even improve somewhat more than their peers during early Army service. A disproportionate trend may be emerging in job-related attitudes -- e.g., high aspirations vs. low job satisfaction -- however, First Follow-Up results do not allow a sufficient passage of time for most changes in attitude to appear. The Second NLS Follow-Up is expected to be especially useful in determining the representative nature of Army population attitudes and the comparative "quality of working life."

APPENDIX

NLS QUESTIONS USED IN THIS REPORT

A. Base Year Questionnaire

The following NLS questions were used in this analysis of Representativeness. The entire NLS questionnaire may be obtained through The National Center for Education Statistics, 4th and Maryland Avenues, Washington, D.C.

10. Have you participated in any of the following types of activities, either in or out of school this year?

(Circle one number on each line.)

	Have not participated	Have participated actively	Have participated as a leader or officer
Athletic teams, intramurals, letterman's club, sports club	1	2	3
Cheerleaders, pep club, majorettes	1	2	3
Debating, drama, band, chorus	1	2	3
Hobby clubs such as photography, model building, hot rod, electronics, crafts	1	2	3
Honorary clubs such as Beta Club or National Honor Society	1	2	3
School newspaper, magazine, yearbook, annual	1	2	3
School subject matter clubs such as science, history, language, business, art	1	2	3
Student council, student government, political club	1	2	3
Vocational education clubs such as Future Homemakers, Teachers, Farmers of America, DECA, OEA, FBLA, or VICA	1	2	3

15. How do you feel about each of the following statements?

(Circle one number on each line.)

	Agree Strongly	Agree	Disagree	Disagree Strongly	No Opinion
I take a positive attitude toward myself	1	2	3	4	5
Good luck is more important than hard work for success	1	2	3	4	5
I feel I am a person of worth, on an equal plane with others	1	2	3	4	5
I am able to do things as well as most other people	1	2	3	4	5
Every time I try to get ahead, something or somebody stops me	1	2	3	4	5
Planning only makes a person unhappy since plans hardly ever work out anyway	1	2	3	4	5
People who accept their condition in life are happier than those who try to change things	1	2	3	4	5
On the whole, I'm satisfied with myself	1	2	3	4	5

20. How important is each of the following to you in your life?

(Circle one number on each line.)

	Not important	Somewhat important	Very important
Being successful in my line of work	1	2	3
Finding the right person to marry and having a happy family life	1	2	3
Having lots of money	1	2	3
Having strong friendships	1	2	3
Being able to find steady work	1	2	3
Being a leader in my community	1	2	3
Being able to give my children better opportunities than I've had	1	2	3
Living close to parents and relatives	1	2	3
Getting away from this area of the country	1	2	3
Working to correct social and economic inequalities	1	2	3

25. In the column under YOU, circle the one number that goes with the best description of the kind of work you would like to do. Under FATHER, circle the one number that best describes the work done by your father (or male guardian). Under MOTHER, circle the one number that best describes the work done by your mother (or female guardian). The exact job may not be listed but circle the one that comes closest. If either of your parents is out of work, disabled, retired, or deceased, mark the kind of work that he or she used to do.

(Circle one number in each column.)

	You	Father	Mother
CLERICAL such as bank teller, bookkeeper, secretary, typist, mail carrier, ticket agent	01	01	01
CRAFTSMAN such as baker, automobile mechanic, machinist, painter, plumber, telephone installer, carpenter	02	02	02
FARMER, FARM MANAGER	03	03	03
HOMEMAKER OR HOUSEWIFE	04	04	04
LABORER such as construction worker, car washer, sanitary worker, farm laborer	05	05	05
MANAGER, ADMINISTRATOR such as sales manager, office manager, school administrator, buyer, restaurant manager, government official	06	06	06
MILITARY such as career officer, enlisted man or woman in the armed forces	07	07	07
OPERATIVE such as meat cutter; assembler; machine operator; welder; taxicab, bus, or truck driver; gas station attendant	08	08	08
PROFESSIONAL such as accountant, artist, clergyman, dentist, physician, registered nurse, engineer, lawyer, librarian, teacher, writer, scientist, social worker, actor, actress	09	09	09
PROPRIETOR OR OWNER such as owner of a small business, contractor, restaurant owner	10	10	10
PROTECTIVE SERVICE such as detective, policeman or guard, sheriff, fireman	11	11	11
SALES such as salesman, sales clerk, advertising or insurance agent, real estate broker	12	12	12
SERVICE such as barber, beautician, practical nurse, private household worker, janitor, waiter	13	13	13
TECHNICAL such as draftsman, medical or dental technician, computer programmer	14	14	14

24. How important is each of the following to you in selecting a job or career?

(Circle one number on each line.)

	Not important	Somewhat important	Very important
Making a lot of money	1	2	3
Opportunities to be original and creative	1	2	3
Opportunities to be helpful to others or useful to society	1	2	3
Avoiding a high-pressure job that takes too much out of you	1	2	3
Living and working in the world of ideas	1	2	3
Freedom from supervision in my work	1	2	3
Opportunities for moderate but steady progress rather than the chance of extreme success or failure	1	2	3
The chance to be a leader	1	2	3
Opportunities to work with people rather than things	1	2	3
Having a position that is looked up to by others	1	2	3

25. How important was each of the following factors in determining the kind of work you plan to be doing for most of your life?

(Circle one number on each line.)

	Not Important	Somewhat important	Very important
Previous work experience in the area	1	2	3
Relative or friend in the same line of work	1	2	3
Job openings available in the occupation	1	2	3
Work matches a hobby interest of mine	1	2	3
Good income to start or within a few years	1	2	3
Job security and permanence	1	2	3
Work that seems important and interesting to me	1	2	3
Freedom to make my own decisions	1	2	3
Opportunity for promotion and advancement in the long run	1	2	3
Meeting and working with sociable, friendly people	1	2	3

29. To answer this question, circle one number for the highest level of education you would like to attain, and also circle one for the highest level you plan to attain.

	(Circle one number in each column.) Would like to attain	Plan to attain
Less than high school graduation	1	1
Graduate from high school but not go beyond that	2	2
Graduate from high school and then go to a vocational, technical, business, or trade school	3	3
Go to a junior college	4	4
Go to a four-year college or university	5	5
Go to a graduate or professional school *after college*	6	6

31. What is the one thing that most likely will take the largest share of your time in the year after you leave high school?

(Circle only one number and then follow the directions beside that number.)

	(Circle one.)	Directions
Working full-time	01	→ *Go to question 32 and complete Section D.*
Entering an apprenticeship or on-the-job training program	02	→ *Skip to page 15 and complete Section E.*
Going into regular military service (or service academy)	03	→ *Skip to page 17 and complete Section F.*
Being a full-time homemaker	04	→ *Skip to page 20 and complete Section G.*
Taking vocational or technical courses at a trade or business school full-time or part time	05	→ *Skip to page 22 and complete Section H.*
Taking *academic courses* at a junior or community college full-time or part-time	06	→ *Skip to page 25 and complete Section I.*
Taking *technical or vocational subjects* at a junior or community college full-time or part-time	07	
Attending a four-year college or university full-time or part-time	08	
Working part-time, but not attending school or college	09	→ *Skip to page 29 and complete Section J.*
Other (travel, take a break, no plans)	10	→ *Skip to page 31 and complete Section K.*

44. Which service will you most likely enter (including Reserve or National Guard within appropriate service)?

(Circle one.)

Army	1
Air Force	2
Navy	3
Marine Corps	4
Coast Guard	5
I don't know	6

84. How do you describe yourself?

(Circle one.)

American Indian	1
Black or Afro-American or Negro	2
Mexican-American or Chicano	3
Puerto Rican	4
Other Latin-American origin	5
Oriental or Asian-American	6
White or Caucasian	7
Other	8

90. What was the highest educational level each of the following persons completed? If you are not sure, please give your best guess.

(Circle one number in each column.)

	Father or male guardian	Mother or female guardian	Oldest brother or sister
Doesn't apply	1	1	1
Did not complete high (secondary) school	2	2	2
Finished high school or equivalent	3	3	3
Adult education program	4	4	4
Business or trade school	5	5	5
Some college	6	6	6
Finished college (four years)	7	7	7
Attended graduate or professional school (for example, law or medical school), but did not attain a graduate or professional degree	8	8	8
Obtained a graduate or professional degree (for example, M.A., Ph.D., or M.D.)	9	9	9

93. What is the approximate income before taxes of your parents (or guardian)? Include taxable and non-taxable income from all sources.

(Circle one.)

Less than $3,000 a year (about $60 a week or less)	01
Between $3,000 and $5,999 a year (from $60 to $119 a week)	02
Between $6,000 and $7,499 a year (from $120 to $149 a week)	03
Between $7,500 and $8,999 a year (from $150 to $179 a week)	04
Between $9,000 and $10,499 a year (from $180 to $209 a week)	05
Between $10,500 and $11,999 a year (from $210 to $239 a week)	06
Between $12,000 and $13,499 a year (from $240 to $269 a week)	07
Between $13,500 and $14,999 a year (from $270 to $299 a week)	08
Between $15,000 and $18,000 a year (from $300 to $359 a week)	09
Over $18,000 a year (about $360 a week or more)	10

94. **Which of the following do you have in your home?**

(Circle one number on each line.)

	Have	Do not have
A specific place for study	1	2
Daily newspaper	1	2
Dictionary	1	2
Encyclopedia or other reference books	1	2
Magazines	1	2
Record player	1	2
Tape recorder or cassette player	1	2
Color television	1	2
Typewriter	1	2
Electric dishwasher	1	2
Two or more cars or trucks that run	1	2

B. First Follow-Up Questionnaire

1. **What are you doing now?**

(Circle one number on each line.)

	Applies to me	Does not apply to me
Working for pay at a full-time or part-time job	1	2
Taking vocational or technical courses at any kind of school or college (for example, vocational, trade, business, or other career training school)	1	2
Taking academic courses at a two- or four-year college	1	2
On active duty in the Armed Forces (or service academy)	1	2
Homemaker	1	2
Temporary lay-off from work, looking for work, or waiting to report to work	1	2
Other (please describe: _____)	1	2

21. How do you feel about each of the following statements?

(Circle one number on each line.)

	Agree strongly	Agree	Disagree	Disagree strongly	No opinion
I take a positive attitude toward myself	1	2	3	4	5
Good luck is more important than hard work for success	1	2	3	4	5
I feel I am a person of worth, on an equal plane with others	1	2	3	4	5
I am able to do things as well as most other people	1	2	3	4	5
Every time I try to get ahead, something or somebody stops me	1	2	3	4	5
Planning only makes a person unhappy since plans hardly ever work out anyway	1	2	3	4	5
People who accept their condition in life are happier than those who try to change things	1	2	3	4	5
On the whole, I'm satisfied with myself	1	2	3	4	5

22a. What type of training program(s) have you participated in?

(Circle one number on each line.)

	Yes	No
On-the-job training (a program of instruction during normal working hours)	1	2
Formal Registered Apprenticeship (your State or Labor Union)	1	2
Manpower Development and Training (MDTA)	1	2
Work Incentive (WIN)	1	2
Neighborhood Youth Corps (NYC)	1	2
Other manpower program (please specify: _____ _____)	1	2
Correspondence course(s)	1	2
Non-credit courses for personal enrichment	1	2
Other (please specify: _____)	1	2

51. **How satisfied were you with the following aspects of this job?**

(Circle one number on each line.)

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
Pay and fringe benefits	1	2	3	4
Importance and challenge	1	2	3	4
Working conditions	1	2	3	4
Opportunity for promotion and advancement with this employer	1	2	3	4
Opportunity for promotion and advancement in this line of work	1	2	3	4
Security and permanence	1	2	3	4
Opportunity for developing new skills	1	2	3	4
Job as a whole	1	2	3	4

73. **How satisfied are (were) you with the following aspects of your work in the Armed Forces?**

(Circle one number on each line.)

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
Pay and fringe benefits	1	2	3	4
Importance and interest of work	1	2	3	4
Working conditions	1	2	3	4
Opportunity for promotion and advancement in the Armed Forces	1	2	3	4
Opportunity for promotion and advancement in my specialty	1	2	3	4
Security and permanence	1	2	3	4
Opportunity for developing new skills	1	2	3	4
Work as a whole	1	2	3	4

Additional Information Taken from the NLS Tapes

Socioeconomic Status. This indiactor was computed by Research Triangle Institute (RTI) of Research Triangle Park, N.C. for NCES using five items from the Base Year survey: father's education, mother's education, parents' income, father's occupation and household items.

Aptitude. A series of tests designed by Educational Testing Service of Princeton, N.J. (ETS) was given to the participants. The areas covered included vocabulary, reading, letter groups, and mathematics. A single measure was constructed by RTI using the results of these tests. The highest quartile was rated HIGH; the middle two quartiles, MEDIUM: and the lowest quartile; LOW.

Region. The 48 states were divided into 4 regions: North East, North Central, South, and West. The region was based on the residence of the student at the time of the Base Year survey.

Literacy Level. This measure was constructed by the MSG in response to a request from ARI. It uses three of the test scores from the NLS test battery: Vocabulary (V), Picture Number Total (P), and Reading (R). The formula used to compute this measure was:

$$LITLEV = V + P + R + 13^{1/}$$

1/ The factor of 13 was used to insure that all results would be positive since V, P, and R could assume negative values.